...ÓS, PROBLEMAS Y DISCUSIONES

SOBRE DIVERSAS PARTES

DE LAS

M...TEMATICAS ELEMENTALES.

OBRA ORIGINAL ESCRITA Y DEDICADA

Á

S. A. R. EL SERMO. SEÑOR PRINCIPE DE ASTÚRIAS,

POR

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Comendador de la Real Orden Americana de Isabel la Católica, condecorado con la medalla militar de la guerra de Africa, Director de seccion retirado del Cuerpo de Telégrafos, Miembro de la Sociedad Económica Matritense de Amigos del País, Regente en Matemáticas y antiguo profesor de esta ciencia, Director de caminos vecinales y canales de riego y Maestro de obras de la Academia Nacional de San Fernando.

ÁLGEBRA.

CUADERNO 2.º

MADRID: 1865.
Establecimiento tipográfico de Estrada, Díaz y Lopez.
Hiedra, 5 y 7.

SEGUNDA PARTE DEL LIBRO PRIMERO.

RESULTADOS DE LOS EJERCICIOS PROPUESTOS EN LA PRIMERA.

Suma.

1. $48b^5+\{12a^2-55\}2b^2+\{47-13a^2\}2b.$

2. $a^{11}+6a^8+8a^5+\{30a^6-6a^8-4a^5+74a^3\}b$
$-42a^3b^2.$

3. $10ab^2+3bc+10abc-10a^2b+3b^2-7b^2c.$

4. $2ab^2c-3a^2bc^2-4a^2bc-3a^2b^2c+4ab^2c^3+$
$8a^2b^2c^2.$

5. $4a^3b^2c+3abc^2-10a^2b^2c^3+7ab^2c-3b^2+4ab^3+$
$2b^2c+5ab^2-3ab+7c^3-8ab^2c^2+7ac^2+5bc^2$
$-7a^3c+7ac^3-5b^3c^2+8b^2c^3.$

6. $\frac{16}{15}a^3+\frac{5}{7}a^2-\frac{205}{126}ab+\frac{53}{88}b^2.$

7. $\frac{49}{36}x^7+\frac{59}{84}x^2y^2-\frac{58}{105}y^3+\frac{9}{16}y^2.$

8. $\frac{15347}{10920}a^3b^2c+\frac{607}{2960}a^2bc^3-\frac{149}{360}ab^3c^2+\frac{25}{510}ab^2c^3$
$-\frac{7}{40}a^3bc^2.$

9. $1,069a^4b^3c^2+0,875a^3b^2c^4+\frac{22517}{50800}a^2b^3c^4$
$-\frac{13}{510}a^4b^2c^3+\frac{15963}{50800}a^2b^4c^3+\frac{22089}{25400}a^3b^4c^2.$

10. $3,2a^2+2a^2b-2,2ab^2-4a^3.$

11. $7,233a^2-1,015ab-0,004b^2.$

12. $\frac{7}{6}a^2b^2c^3-0,2a^2bc^2+0,4a^2b+8,4a^2b^2-5,75ac^2$
$+0,5b^2c+0,2a^3b+7,4a^2b^3.$

13. $8,4a^2b^2c+3\frac{191}{300}ab^2c^2-10\frac{7}{8}abc.$

14. $0,008ab^2c^3+7,1875a^3bc^2+48,9a^2b^3c+$
$0,175a^3b^2c-1,3125a^2bc^3+0,75ab^3c^2.$

15. $23\frac{611}{840}a^3b^4cd^2-1,925a^4b^3c^2d-1,025a^2bc^3d^4+$
$\frac{7}{510}ab^2c^4d^3-\frac{19}{510}ab^3c^4d+0,4375a^3b^2cd^4$
$-\frac{11}{840}a^3b^4c^2d.$

16. $-2,3ab^m+1,9a^mb+0,7a^mb^m+0,3a^nb^n$
$-7,5ab.$

17. $5,25a^mb-\frac{4}{3}ab^m+4,6a^mb^m-7,825a^nb^m+$
$0,75a^mb^n+3,2a^nb^n+7,5ab.$

18. $5a^m b^n + 3a^n b^m - a^m b^{n-1} + a^{m-1} b^n - 10a^{n-1} b^m + 6a^{n-1} b^{m-1} - 3a^{m-1} b^{n-1} - 7a^{m-1} b^{m-1} + a^n b^n - 7a^m b^m$.

19. $2m\{x^4 - x^3y + x^2y^2 - xy^3 + y^4\}$.

20. $2\{2x^4 + mx^3y + mx^2y^2 - xy^3 + my^4\}$.

Resta.

21. $3ab^2c^3 - 6a^2bc^3 + 12a^3bc^2$.

22. $8a^2b^3c + 8ab^3c^2 - 13a^2bc^3 - 8a^3bc^2$.

23. $8a^3b^4c^3 + a^4b^3c^3 + 8a^3b^3c^4 - 5a^3b^4c^3 - 3a^3b^3c^2 - 3a^3b^4c^2$.

24. $42x^4y^3 - 37x^3y^4 + 10x^3y^2 - 15x^2y^3$.

25. $-\frac{3}{8}x^2 - 1\frac{6}{35}xy + \frac{1}{5}y^2$.

26. $-\frac{1}{6}x^3 + \frac{3}{4}xy + 1\frac{23}{35}y^3$.

27. $\frac{4}{15}x^4 - 2,1x^3y^2 + \frac{5}{7}x^2y^3 - \frac{3}{4}y^4$.

28. $-2,7a^4b^3c - 2,5a^3b^4c + 1,6ab^3c^4$.

29. $1,9x^4y^3 - 10,55x^2y - 3,4y^4$.

30. $\frac{3}{4}a^7b^3c^2 + \frac{5}{7}a^4b^3c^3 + a^4b^3c^2 - \frac{2}{5}a^3b^4c^2 + \frac{5}{7}a^3b^2c^3$.

31. $1\frac{15}{14}ab^2c^3 + 8\frac{4}{35}a^3bc^2 - \frac{2}{9}a^3b^2c$.

32. $3\frac{1}{28}a^5b^7c^2 - 3\frac{1}{33}a^7b^5c^2 + 1\frac{31}{35}a^2b^5c^7.$

33. $4a^2b^2\{a+b+1\}.$

34. $-2{,}4a^4b^5c^2 + 11{,}525a^2b^5c^4 + 0{,}75a^4b^2c^5 + ab^4c^5$

35. $1{,}1a^4b^5c^2 - 7{,}75a^2b^5c^4 - 7{,}4a^5b^4c^2.$

36. $\{m-4\}x^4 - \{m+2\}x^5y + \{m-4\}x^2y^2 - mxy^5 + \{m-8\}y^4.$

37. $\{m-2\}x^4 + \{m+6\}x^5y + \{m-6\}x^2y^2 + \{m+6\}xy^5 + \{m-10\}y^4.$

38. $x^5 + x^2y + xy^2 + my^5.$

39. $4x^4 + 2x^5y - 2xy^5 - 4y^4.$

40. $2\{mx^4 - mx^5y + xy^5 - 2y^4\}.$

Multiplicacion.

41. $35a^8b^7c^9de^5.$

42. $35a^8b^7c^9.$

43. $60a^{16}b^6c^5.$

44. $a^{10}b^{10}c^{11}.$

45. $2a^{11}b^4c^2d^4f^7.$

46. $a^{10}b^{10}cdmnp.$

47. $17\frac{2}{7}a^{10}b^6c^5.$

48. $22{,}325a^9b^7c^8.$

49. $64a^{15}b^{12}c^{11}.$

50. $1{,}7a^9b^8c^7df.$

51. $2{,}3871a^5b^4c^5.$

52. $0{,}2025a^4b^5c^5.$

53. $6a^5b^5c^5 - 7a^5b^5c^7 - 5a^4b^6c^5.$

54. $2{,}8a^6b^5c^3 - 5{,}25a^6b^3c^4 - 3{,}0625a^6b^5c^5$.

55. $\frac{2}{5}a^6b^6c^6 - \frac{1}{2}a^5b^5c^5 + \frac{5}{7}a^4b^4c^4$.

56. $59\frac{5}{12}a^6b^8c^4 - 43\frac{4}{9}a^7b^6c^5 - 66\frac{17}{21}a^5b^7c^6$.

57. $1{,}4a^8b^4c^6 + 0{,}42a^9b^6c^5 - 0{,}49a^2b^5c^3$.

58. $5\frac{5}{6}\,a^{2m}\,b^{m+n}\,c^{m+p} - 11\,\frac{11}{14}\,a^{m+n}\,b^{m+p}\,c^{2m} - 14\frac{4}{9}a^{m+p}\,b^{2m}c^{m+n}$.

59. $-18a^5b^4c^4 + 15a^4b^5c^2 - 56a^5b^5c^5 - 14a^2b^4c^5 + 49a^2b^5c^4 + 8a^5b^5c^5 + 12a^4b^4c^3$.

60. $2a^7b^7c^7 + a^8b^8c^5 + a^9b^7c^5 + a^6b^6c^9 + a^8b^6c^7 + a^5b^8c^8 + a^6b^9c^6 + a^7b^8c^6$.

61. $-15a^2b^4c^6 - 14a^4b^5c^5 - 19a^5b^5c^4 + 16a^6b^2c^4 - 44a^5b^4c^5 + 10a^4b^6c^2$.

62. $x^8 + 8ax^7 + 38a^2x^6 + 96a^3x^5 + 130a^4x^4 + 96a^5x^3 + 38a^6x^2 + 8a^7x + a^8$.

63. $9x^6 + 45ax^5 + 99a^2x^4 + 126a^3x^3 + 99a^4x^2 + 45a^5x + 9a^6$.

64. $17{,}74a^8b^8c^5 + 1{,}02a^7b^9c^5 + 2{,}55a^6b^9c^4 + 1{,}04a^9b^7c^5 + 44{,}2a^7b^8c^4 - 0{,}08a^8b^4c^7 - 1{,}36a^7b^5c^7 - 3{,}4a^6b^5c^8$.

65. $1{,}6a^2b^7c^5 - 1{,}6a^5b^6c^5 - 3{,}5a^4b^6c^2 - 10{,}24a^6b^3c^3 + 10{,}24a^7b^2c^3 + 22{,}4a^8b^2c^2$.

66. $x^{10} - 7{,}7ax^9 + 18{,}7a^2x^8 - 27{,}69a^3x^7 + 33{,}12a^4x^6 - 43{,}75a^5x^5 + 40{,}63a^6x^4 - 32{,}45a^7x^3 + 24{,}61a^8x^2 - 15{,}49a^9x + 14{,}3a^{10}$.

67. $1{,}8a^6b^6c^3d^7 + \frac{9}{35}a^3b^5c^2d^7 - 0{,}24a^4b^4c^4d^7 - 1{,}2a^5b^9c^{10} - \frac{6}{35}a^4b^8c^9 + 0{,}16a^3b^7c^{11} - 24a^6b^8c^3p - 3\frac{3}{7}a^5b^7c^2p + 3{,}2a^4b^6c^4p$.

68. $a^3b^7c^3 - 3{,}4a^6b^4c^4 - \frac{3}{9}a^2b^9c^3 + 4{,}3a^9b^2c^3mp^3 - 3{,}4a^4b^7c + 11{,}56a^7b^4c^2 + 1\frac{8}{9}a^3b^9c^3 - 14{,}62a^{10}b^2cmp^3 - \frac{7}{9}a^4b^6d^7 + 2\frac{29}{45}a^7b^3cd^7 + \frac{35}{81}a^3b^8c^2d^7 - 3\frac{31}{90}a^{10}bd^7mp^3$.

69. $0{,}1a^8b^8c^9 + 0{,}15a^4b^8c^9 - 0{,}6a^3b^3c^7 - 2{,}6a^{10}b^8c^6 - 3{,}9a^6b^8c^6 + 15{,}6a^3b^3c^4 - a^{12}b^{13}c^{11} - 1{,}5a^8b^{13}c^{11} + 6a^7b^8c^9$.

70. $\frac{9}{49}a^8x^{10} + \frac{12}{35}a^9x^9 + \frac{4}{25}a^{10}x^8 - \frac{4}{9}a^{12}x^6$.

71. $9a^6x^8 - \frac{4}{9}a^8x^6 + 2a^9x^3 - \frac{9}{4}a^{10}x^4$.

72. $2{,}5x^4 - \frac{640}{81}a^4$.

73. $\frac{16}{9}x^3 - \frac{6561}{64}a^3$.

74. $\{a^3 + a^2b - ab^2 - b^3\}x^3 + \{-a^2 + b^2 - a^3 + a^2b + ab^2 - b^3\}x^2 + \{2a^2 - 2ab\}x - \{a^2 - 2ab + b^2\}$.

75. $\{a^4 - b^4\}x^3 + \{2a^3 - 2b^3\}x^4 + \{2a^6 + a^4 - a^4b^2 + a^2b^4 + 2a^2b^2 - 2b^6 + b^4\}x^3 + \{a^7 + a^6 + a^5 + a^4b^2 - a^4b^3 + a^3b^2 + a^3b^4 + a^2b^3 - a^2b^4 + b^5 - b^6 - b^7\}x^2 + \{a^7 + a^6 + a^4b^2 - a^3b^4 + a^2b^4 + b^6 - b^7 + a^4b^3\}x + a^8 - b^8$.

76. $\{a^4+3a^3-a^2-9a-6\}x^4+\{a^5+4a^4+2a^3+a^3b-5a^2-15a-3ab-19\}x^3+\{a^7+3a^6+3a^5+a^4+a^4b+3a^3+3a^3b-10a^2-21a-14ab-44\}x^2+\{a^7+a^6b+4a^5+3a^4b+5a^3-12a^2-22ab-46\}x+a^7+3a^6b+5a^5-7a^2-21ab-35.$

77. $\{\frac{4}{15}a^4+\frac{5}{5}a^3b-\frac{5}{9}ab^3-\frac{5}{4}b^4\}x^4+\{\frac{6}{25}a^5+\frac{8}{35}a^3b^2+\frac{4}{9}a^3+a^2b-\frac{4}{2}a^2b^3-\frac{2}{7}ab^2-\frac{9}{14}b^3-\frac{10}{21}b^3\}x^3+\{\frac{4}{35}a^6+\frac{2}{5}a^4+\frac{5}{9}a^2+\frac{2}{21}a^3b^3+\frac{45}{105}a^2b^2+\frac{19}{28}ab-\frac{25}{36}b^6-\frac{12}{49}b^4-\frac{9}{7}b^2\}x^2+\{\frac{4}{21}a^3+\frac{1}{2}a^3-\frac{6}{49}a^3b^2-\frac{18}{35}a^2b+\frac{5}{9}a^2b^3+\frac{10}{21}ab^2-\frac{24}{49}b^3-\frac{5}{14}b^3\}x+\frac{5}{21}a^4-\frac{12}{49}a^3b+\frac{25}{36}ab^3-\frac{5}{7}b^4.$

78. $\{a^4+0,5a^3b-0,5ab^3-b^4\}x^4+\{0,5a^4+0,2a^3+0,25a^3b-0,3a^2b-4,8a^2b^2-0,2ab^2-2,65ab^3+0,3b^3-5,3b^4\}x^3+\{2,3a^4+2,3a^3-2,35a^2b-5,5a^2b^2-0,51ab^2-1,71b^3+3,2b^4\}x^2+\{1,15a^4+0,44a^2-13,79a^2b^2-1,32ab+0,99b^2+16,96b^4\}x+5,06a^3-7,04ab^2-7,59a^2b+10,56b^3.$

79. $\{1,2a^3+2,4a^4b+\frac{4}{15}a^3b+0,2a^2b^3+\frac{8}{15}a^2b^2+\frac{2}{5}ab^4+15a^3b^2+\frac{10}{3}ab^3+2,5b^5\}x^5+\{21a^6-2,1a^5b+0,24a^4+\frac{14}{3}a^4b-0,32a^3b-\frac{7}{15}a^3b^2+1,25a^3b^3+1,52a^2b^2-0,35a^2b^4-9,76ab^3-0,5ab^4+1,5b^4-0,375b^6\}x^2+\{4,32a^5-12,98a^4b+7,4a^3b^2+14,5a^2b^3+1,82ab^4+1,775b^5\}x+2,1a^6+20,79a^5b-2,1a^4b^2+2,575a^3b^3-2,53a^2b^4-0,3b^6.$

Division.

80. $9a^7b^4$. **81.** $7a^{m-4}b^5c^{n-1}$. **82.** $a^4b^6c^5$.

83. $-a^7b^4c$. **84.** $-a^nb^pc^q$. **85.** $a^{4n}b^{2p}$.

86. $-a^n$. **87.** $\{1-m\}a^{4(n-1)}b^{3(p-1)}c^{2(q-1)}$.

88. $3ab^5c^5-4a^3b^2c+5a^2bc^2-4ab^3c^2+3a^2bc^3$.

89. $4a^4b^3c^2-3a^3b^2c^4+2a^2b^3c^4-4a^3b^3c^3$.

90. $2a^3b^4c^3-4a^4b^3c^2+3a^3b^2c-ab^2c^3$.

91. $80a^2b-112ac^2+64a^2c-128ac^3$.

92. $-8a^4b^3c^4\{a^2b+bc^2+ac^2+ab^2\}$.

93. $3a^3b^3c^2-4a^4b^4c^3+2a^2b^2c^4-7a^2b^3c^2$.

94. $3,2ab^2c^3d^4-7,03a^2b^3c^4d+2,003a^3b^4cd^2$
$-2,123a^4b^3c^2d$.

95. $2,3abc-3,2a^2b^2c^2+3,3a^3b^3c^3-3,03ab^2c^3$.

96. $-3a^3b^3c^4+3a^4b^4c^3+2a^3b^3c^3+5a^4b^4c^3$.

97. $2a^3b-3a^2b^2+5ab^3$.

98. $4a^2b-5ab^2+3b^3+\frac{2a^2b^3+5ab^6-3b^7}{2a^3b-3a^2b^2+5ab^2}$.

99. $a^4-3a^2x+5ax^2-x^4$.

100. $3a^5x-2a^7+3x^8$.

101. $3a^3-2a^2x+3ax^2-5x^3.$

102. $3qrs-4rst+3stu.$

103. $0,2a^3-0,3a^2x+0,3ax^2+\frac{0,1a^4x^3+0.09a^3x^4-15a^2x^5}{3a^4-0,3a^3x+0,03a^2x^2-5ax^3}.$

104. $\{a^2-2ab+b^2\}x^2+\{a^2+2ab+b^2\}xy+\{a^2+ab+b^2\}y^2+\{a^2-ab+b^2\}x+\{a^3+b^3\}y+a^3-b^3.$

105. $\{x^2+2x+y\}a^2+\{3x^2+5x+y\}2ab+\{x^3-3xy+y^3\}b^2.$

106. $\{z^2+2xz-x^2\}a^3+\{x^3-xy-y^3\}b^3+\{x-zy+2xyz\}c^3.$

107. $\{27a^9b^6c^3+36a^7b^4c^7+81a^5b^8c^5+54a^8b^5c^5-81a^7b^7c^4-108a^6b^6c^6+8a^6b^3c^9-36a^5b^5c^8-27a^3b^9c^6+54a^4b^7c^7\}x^3+\{9a^6b^4c^2+4a^4b^2c^6+9a^2b^6c^4+12a^5b^3c^4-18a^4b^5c^3-12a^3b^4c^5\}x^2+\{3a^3b^2c+2a^2bc^3-3ab^3c^2\}x+1.$

108. $\{3m+2p\}x^2+\{3a+2b\}xy+\{3a^2+2b\}y^2+\{a^2-2ab\}x+\{b^2-2ab\}y+3m^2-2mn+p.$

109. $\{4x+\frac{9}{x+3}\}a^3+\{27x^2+81-\frac{216}{x+3}\}a^2+\{25x-45+\frac{141}{x+3}\}a+1.$

110. $x^4+2x^3+4x^2+8x+16.$

111. $x^5+3x^4+9x^3+27x^2+81x+243.$

112. $x^6+0,2x^5+0,04x^4+0,008x^3+0,0016x^2+0,00032x+0,000064.$

113. $x^7+7x^6+49x^5+343x^4+2401x^3+16807x^2+117649x+823543.$

114. $x^3-11x^2+121x-1331.$

115. $x^4-12x^3+144x^2-1728x+20736.$

116. $x^6-13x^5+169x^4-2197x^3+28561x^2-371293x+4826809.$

117. $x^2-2,01x+4,0401-\frac{16,241202}{x+2,01}.$

118. $x^3-2,03x^2+4,1209x-8,365427.$

119. $x^4-2,02x^3+4,0804x^2-8,242408x+16,64966416-\frac{67,2646432064}{x+2,02}.$

120. $x^5-1,4x^4+1,96x^3-2,744x^2+3,8416x-5,37824.$

121. $x^2+3,31x+10,9561+\frac{72,529382}{x-3,51}.$

122. $x^3+2,3x^2+5,29x+12,167+\frac{55,9682}{x-2,3}.$

123. $x^4+1,7x^3+2,89x^2+4,913x+8,3521+\frac{28,39714}{x-1,7}.$

124. $x^5+2,1x^4+4,41x^3+9,261x^2+19,4481x+40,84101+\frac{171,532242}{x-2,1}.$

125. $x^2-1,02x+1,0404.$

126. $x^5-3,02x^2+9,1204x-27,543608+\frac{166,36539232}{x+3,02}.$

127. $x^6 - 3,7x^5 + 13,69x^4 - 50,653x^3 + 187,4161x^2 - 693,43957x + 2565,726409.$

128. $3a^2bx^2 + \{9a^4b^2 + 2ab^2\}x + 27a^6b^3 + 6a^5b^5 + 5a^2b + \frac{81a^8b^4 + 18a^5b^4 + 45a^4b^2 + 2ab^2}{x - 3a^2b}.$

129. $2ab^2c^3x^2 + 10a^2b^4c^6x + 6a^4b^8c^9 + 30a^3b^6c^9 + \frac{90a^4b^8c^{12} + 18a^5b^{10}c^{12} + 5a^8b^{16}c^{18}}{x - 3ab^2c^3}.$

130. $a^5b^2cx^3 + 5a^{27}b^{18}c^9x - a^{81}b^{54}c^{27} + 10a^{33}b^{22}c^{11} + \frac{20a^{39}b^{26}c^{13} - 2a^{87}b^{58}c^{29} + 3a^8b^6c^4}{x - 2a^6b^4c^2}.$

131. $\{3a^2 + 2b^2\}x^2 + \{3a^4 - a^2b^2 - 2b^4 + 2a^2 - 3b^2\}x + 3a^6 - 4a^4b^2 - a^2b^4 + 7a^4 - 5a^2b^2 + 2b^6 + \frac{5a^8 - 7a^6b^2 + 3a^4b^4 + 8a^6 - 12a^4b^2 + 3a^2b^6 + 5a^2b^4 - 2b^8 - 2b^6}{x - (a^2 - b^2)}.$

132. $\{a^3 - b\}x^3 + \{a^4 - ab - a^3b^4 + b^3 - a + b^3\}x^2 + \{a^5 - a^2b - 2a^4b^4 + 2ab^5 + ab^3 + a^3b^8 - b^9 + ab^4 - b^7 - b\}x + a^6 - a^3b - 3a^5b^4 + 3a^2b^5 + a^2b^3 + 3a^4b^8 - 3ab^9 + a^2b^4 - 2ab^7 - ab - a^3b^{12} + b^{13} - ab^8 + b^{11} + b^3 - a + b^2 + \left\{\frac{a^7 - 4a^6b^4 + 6a^3b^8 - 4a^4b^{12} + a^3b^{16} - a^4b + 4a^3b^5 - 6a^2b^9 + 4ab^{13} - b^{17} - a^2 + a^3b^4 - 2a^2b^8 + ab^{12} + a^3b^3 - 3a^2b^7 + 3ab^{11} - b^{15} - a^2b + 2ab^5 - b^9 + ab^2 + ab^4 - b^6 + a^4 - b}{x - (a - b^4)}\right\}.$

133. $5x^3 + \{5a^2 - 15b + 28\}x^2 + \{5a^4 - 30a^2b + 53a^2 + 45b^2 - 159b + 147\}x + 5a^6 - 45a^4b + 78a^4 + 135a^2b^2 - 468a^2b + 412a^2 - 135b^3 + 702b^2 - 1236b + 741 + \left\{\frac{5a^8 - 60a^6b + 105a^6 + 270a^4b^2 - 927a^4b + 802a^4 - 540a^2b^3 + 2781a^2b^2 - 4812a^2b + 2801a^2 + 405b^4 - 2781b^3 + 7218b^2 - 8405b + 5713}{x - (a^2 - 3b + 5)}\right\}.$

134. $\{a^2-5\}x^3+\{a^5-2a^2b+2a^2-5a^3+10b-b^2-7\}x^2+\{a^8-4a^5b+4a^5-5a^6+20a^3b-a^3b^2-17a^3+4a^2b^2-8a^2b-22b^2+2b^3+33b+5a^2-14\}x+a^{11}-6a^8b+6a^8-5a^9+30a^6b-a^6b^2-27a^6+12a^5b^2-24a^5b-64a^3b^2+4a^3b^3+107a^3b+13a^5-48a^5-8a^2b^3+24a^2b^2+48b^3-4b^4-110b^2-26a^2b+94b-28+10a^2+$

$$\frac{\left\{\begin{array}{c}a^{14}-8a^{11}b+8a^{11}-5a^{12}+40a^9b-a^9b^2-37a^9+24a^8b^2-48a^8b-126a^6b^2\\+6a^6b^3+221a^6b+25a^8-102a^6-32a^5b^3+184a^3b^3-12a^3b^4-452a^3b^2\\-100a^5b+404a^3b+96a^5b^2+36a^5-124a^3+16a^2b^4-104b^4+8b^5+316b^3\\+100a^2b^2-408b^2-64a^2b^3-72a^2b+244b+21a^2-7ab-51\end{array}\right\}}{x-(a^3-2b+2)}.$$

135. $\{a^2-b^2\}x+b^2-a^2.$

136. $\{5a+2b\}x+2a-3c.$

137. $\{m-2n\}x+m^2-n^2.$

138. $\{a-1\}x+b-m.$

139. $\{a-1\}x^2+\{b+1\}x+b^2-1.$

140. $\{a^2-ab+1\}x^2+\{a^2-b+1\}x+a^2+b-1.$

Máximo comun divisor.

141. $3x^4-3x^2.$ **142.** $7x^2\{x^2-1\}\{x^3+1\}.$

143. $3x^3\{x+1\}\{x^2-1\}.$

144. $8x^3\{x^2-9\}\{x^2-1\}.$

145. $5x^4\{x^3+1\}\{x^2-1\}.$

146. $7x^3\{x^2-3\}.$ **147.** $x^2-4.$

148. x^2+4x+4. **149.** $13x^2\{x^2-1\}$.

150. $35x^4+140x^3+105x^2$. **151.** $6x^5y-6xy^5$.

152. $5x^2y^2\{y^2-1\}\{x^2-1\}$.

153. $5xy\{x^2-1\}\{y^2-1\}$.

154. $x^2y^2\{y^2-1\}\{x-1\}$.

155. $3x^2y^2\{x^3+1\}\{x^2-1\}\{y-1\}$.

156. $3x^2y^2\{x^3+1\}\{x^2-1\}\{y^2-1\}$.

157. $3x^2y^2\{x+1\}\{y-1\}\{x^2-y^2\}$.

158. $4x^2y^2\{x+2\}^2\{y-3\}^3$.

159. $4x^3y^2\{x+2\}^2\{y-2\}\{x+y\}$.

160. $6x^2y^2\{x+1\}^2\{x-y\}^3$.

161. $3x^2yz\{x+y\}\{x+1\}\{z+1\}$.

162. $7x^2y^3z\{x+y\}\{x+z\}\{y+z\}$.

163. $3x^2+2xy+5xz+7z^3$.

164. $3xz\{x+1\}\{y-1\}\{z^2+y^2\}$.

165. $3xz\{x+1\}\{y-1\}\{z^2+y^2\}\{x+z\}$.

166. $3xz\{x+1\}\{y-1\}\{z^2+y^2\}\{2x+1\}$.

167. $3xz\{x+1\}\{y-1\}\{z^2+y^2\}\{3x+2\}$.

168. $8x^3y^2z\{7x^2+1\}\{6y^2+1\}\{5z^2+1\}\{4x^2+3y^2+2z^2+1\}$.

Mínimo comun múltiplo.

169. $2431a^9b^{11}c^3x^8$. **170.** $6783a^{13}b^8x^{11}y^{14}$.

171. $316825a^{13}b^{17}x^{13}y^{14}$.

172. $6556407a^{23}b^{20}x^{20}y^{21}z^{15}$.

173. $500214a^{m+n+p}\ b^{m+n}\ x^{n+p}$.

174. $\{m^2-1\}a^9b^8x^5$.

175. $\{a^4-1\}b^{m+p+5}\ x^{m+q+5}$.

176. $\{m^4-8m+2m^3-16\}a^{p+5}\ b^{p+5}\ x^{q+5}$.

177. $\{m^4-16\}a^{n+5}\ b^{m+7}\ x^{p+5}$.

178. $x^7+19x^5-11x^6+115x^4-236x^3-464x^2+576x+720$.

179. $x^7-32x^4+6x^6-68x^3+x^5-8x^2+192x+160$.

180. $x^{11}+3x^{10}-40x^9-131x^8+398x^7+1709x^6-128x^5-8101x^4-12687x^3+8896x^2+37800x+12600$.

181. $3x^7-10a^2x^5-2ax^6+7a^4x^3+9bx^6-30a^2bx^4-6abx^5+21a^4bx^2+2a^5x^2+6a^5bx+6b^2x^5-20a^2b^2x^3-4ab^2x^4+14a^4b^2x+4a^5b^2$.

182. $3x^5y^4+2x^4y^5+7x^4y^4-3xy^8-2y^9-7y^8-3x^5-2x^4y-7x^4+3xy^4+2y^5+7y^4$.

183. $x^7-5x^6+54x^4-x^5y^2+5x^4y^2-54x^2y^2-9x^5-81x^2+9x^3y^2+81y^2.$

184. $x^8z^2+x^6z^4-x^4z^4-x^4z^2-y^4z^4-y^4z^2+x^4y^4-x^2y^4-4x^4y^2+x^8-x^6+4x^6y^2z^2+4x^6y^2+x^4y^4z^2+4x^4y^2z^4+x^2y^4z^4-4x^2y^2z^4-4x^2y^2z^2.$

185. $0{,}5x^7+x^5y^2+2x^5z^2+0{,}3x^4z^5+0{,}6x^2y^2z^5+1{,}2x^2z^5+1{,}15x^5y+2{,}3x^3y^3+3{,}45x^3yz^2+0{,}69x^2yz^5+1{,}38y^3z^3+2{,}07yz^5+x^5y^2z^2+1{,}5x^5z^4+0{,}6y^2z^5+0{,}9z^7.$

186. $0{,}5x^8+0{,}2x^5y+0{,}3x^4y^3+0{,}15x^6z+0{,}06x^5yz+0{,}09x^2y^5z+0{,}5x^5z^5+0{,}2x^2yz^5+0{,}3xy^5z^3+0{,}5x^7y+0{,}2x^4y^2+0{,}3x^3y^4+0{,}15x^5yz+0{,}06x^2y^2z+0{,}09xy^4z+0{,}5x^4yz^5+0{,}2xy^2z^5+0{,}3y^4z^3+0{,}5x^7z+0{,}2x^4yz+0{,}3x^5y^3z+0{,}15x^5z^2+0{,}06x^2yz^2+0{,}09xy^5z^2+0{,}5x^4z^4+0{,}2xyz^4+0{,}3y^3z^4.$

187. $x^7+4x^6+8x^5+8x^4-16x^3-64x^2-128x-128.$

188. $x^4-625.$

189. $x^{15}-2x^{14}+21x^{12}-48x^{11}-37x^{10}+214x^9-57x^8-455x^7+371x^6+286x^5-810x^4+1094x^3-578x^2-1428x+1680.$

190. $x^7+2ax^6+2a^2x^5+a^3x^4-a^4x^3-2a^5x^2-2a^6x-a^7.$

191. $x^6+ax^5+a^2x^4-a^4x^2-a^5x-a^6.$

192. $x^9 + a^4x^5 + a^7x^2 + a^2x^7 + a^5x^4 + a^9 + a^6x^3 + a^3x^6$.

193. $\{-3x^5-6x^3+9x^2+18\}\,y^6 + \{-14x^6-9x^5-28x^4+24x^3+27x^2+84x+54\}y^5 + \{-22x^7-21x^6-44x^5+24x^4+63x^3+132x^2+126x\}y^4 + \{-18x^8-22x^7-36x^6+10x^5+66x^4+108x^3+132x^2\}y^3 + \{-6x^9-11x^8-12x^7-4x^6+33x^5+36x^4+66x^3\}\,y^2 + \{2x^{10}+x^9+4x^8-4x^7-3x^6-12x^5-6x^4\}y + x^{11}+2x^{10}+2x^9+x^8-6x^7-6x^6-12x^5$.

194. $\{180x^7-180x^5\}\,y^6 + \{180x^9+180x^8+180x^6-180x^7-360x^4\}\,y^5 + \{180x^{10}-180x^8+180x^7-180x^5\}y^4 + \{-180x^9+180x^7-180x^6-180x^8+360x^4\}\,y^3 + \{-180x^{10}-360x^7+180x^8+360x^5\}\,y^2$.

195. $x^4+5x^3y+3x^2z-x^2z^2-5xyz^2-3z^3$.

FRACCIONES.

Suma.

196. $\frac{(a+b)^2}{ab}$.

197. $\frac{(a+d-b-c)^2}{ac-bc-ad+bd}$.

198. $\frac{a(1+b-c)-b(b+c)}{a^2-b^2}$.

199. $\frac{-a^5+a^4(b+1)-a^3(4b-1)+3a^2b(2b+1)+ab^2(3-4b+b^2)+b^3(1+b-b^2)}{(a^2-b^2)^2(a-b)}$.

200. $\frac{-a^3+a(b^2+2bc+2c^2)+b^3+b^2c+bc^2+c^3}{a(b+c)(a+b+c)+bc(b+c)}$.

201. $\dfrac{5a^2-ab+2b^2+2a+3b}{a^2-b^2}$.

202. $\dfrac{\left\{\begin{array}{c}5a^6+9a^5b+20a^4b^2+15a^3b^3+12a^2b^4+ab^5+5b^6+5a^7b+10a^6b^2+15a^5b^3\\+15a^4b^4+10a^3b^5+5a^2b^6\end{array}\right\}}{a^6+a^5b+a^4b^2-a^2b^4-ab^5-b^6}$.

203. $\dfrac{\left\{\begin{array}{c}10ab^2cd^6-105a^2cd^5+(120bc^2-27a^2b^2c)d^4+(135a^3c-72ab^3+900a^7c)d^2\\-75a^2bc^6-1260a^2b^4c\end{array}\right\}}{180a^3b^3c^3d^3}$.

204. $\dfrac{\left\{\begin{array}{c}4a^6+(6b+2)a^5+(14b^2+1+3b)a^4+(12b^3+2b+5b^2+1)a^3+(14b^4+2b^2+\\4b^3-b)a^2+(6b^5+2b^3+3b^4-b^2)a+4b^6+b^4+b^5-2b^3\end{array}\right\}}{a^6+a^5b+a^4b^2-a^2b^4-ab^5-b^6}$.

205. $\dfrac{\left\{\begin{array}{c}a^4+2a^3b+2a^2b^2+2ab^3+b^4+2a^5b+2a^4b^2+4a^3b^3+2a^2b^4+2ab^5-a^5b^2\\-a^3b^4+a^2b^5+b^7+5a^4b+7a^3b^2-ab^4-3b^5+2a^5+2a^2b^3-a^6b-a^4b^3\\+a^3b^4+ab^6\end{array}\right\}}{a^6+a^5b+a^4b^2-a^2b^4-ab^5-b^6}$.

206. $\dfrac{\left\{\begin{array}{c}b(2a^9+4a^8+12a^5)-b^2(a^8+8a^7+34a^6-12a^4)-b^3(12a^7+21a^6+8a^5+\\51a^3)+b^4(a^6-10a^5+8a^4-51a^2)+b^5(17a^5+13a^4+34a^3+12a)+b^6(16a^4\\+23a^3+12)-b^7(3a^3-6a^2+8a)-b^8(16a^2+5a)-b^9(4a+2)+8a^8\end{array}\right\}}{4a^8+4a^7b-17a^6b^2-21a^5b^3+21a^3b^5+17a^2b^6-4ab^7-4b^8}$.

Resta.

207. $\dfrac{4a^3b+9b^3-5c}{6a^2b^2}$. **208.** $\dfrac{60a^3+27b^3-30abc+16a^3b}{72a^2b^2}$.

209. $\dfrac{45a^3bc^2+60ab^3c+40bc^2-216a^3c-48b^3c-252a^2bd}{360a^2b^2c^2}$.

210. $\dfrac{2a^2b^2-2a^3b-2ab^3}{a^4-b^4}$. **211.** $\dfrac{4ab-a-b+a^3-ab^2-a^2b+b^3}{a^2-b^2}$.

212. $\dfrac{9ab(a+b)-3(a^3+b^3)+40a(a-b)}{72(a^2-b^2)(a+b)}$.

213. $\dfrac{30a^4+5a^3+30b^4+15b^3+65a^3b+a^2b(60b-15)+ab^2(65b+3)}{36a^4-97a^2b^2+36b^4}$.

214. $\frac{a(1-a^2-3a+7b^2-4b)+b(2a^2+4b^2-b-2)}{(a+b)^3}$.

215. $2\times\frac{(bc^2-b^2c-b^3)a^4+(b^4c+b^3c^2+2b^2c^3-bc^4-c^5)a^2-2b^4c^3+b^2c^5}{(b^2-c^2)a^4+(c^4-b^4)a^2+b^4c^2-b^2c^4}$.

216.

$$\frac{\left\{a^2+ab+b^2\right\}^2\left\{a^2+b^2\right\}^2\left\{4a^2\left\{a-b\right\}^2-4b^2\left\{a+b\right\}^2\right\}}{4ab\left\{a+b\right\}\left\{\left\{a^2+b^2\right\}-\left\{a^2+ab+b^2\right\}\right\}\left\{a+b\right\}\left\{\left\{\left\{a-b\right\}^2\left\{a^2+ab+b^2\right\}-\left\{a^2+b^2\right\}\left\{a+b\right\}\right\}\right.}.$$

Multiplicacion.

217. 1. **218.** $\frac{2a^2+5ab+2b^2}{2a^2-5ab+2b^2}$. **219.** $\frac{1}{a^2-b^2}$.

220. $\frac{16a^5+10a^3b^2-40a^2b^3-25b^5}{5a^3+3ab^2+7a^2b+7b^3}$.

221.
$$\frac{a^5+(2b+3c)a^4+(6bc+b^2+3c^2)a^3+(3b^2c+6bc^2+c^3)a^2+(3b^2c^2+2bc^3)a+b^2c^3}{a^3-(3b+2c)a^4+(3b^2+6bc+c^2)a^3-(b^3+6b^2c+3bc^2)a^2+(2b^3c+3b^2c^2)a-b^3c^2}.$$

222. $\frac{a^5+2a^3+2a^2+4}{a^5+a^3-a^2-1}$. **223.** $\left\{\frac{a+b}{a-b}\right\}^2\times\frac{1}{a-b}$.

224. $-\left\{\frac{(a+b)(a-3)}{(a-b)(a^2+b^2)}\right\}^2$. **225.** $-\frac{a^2x^2(a+x)(a+x^2)(x-2a)}{(a-x)^5(a^2+x)(x+2a)}$.

226. $9x^2a^2+18x^2ab+9x^2b^2-25a^4-50a^3b-25a^2b^2$.

Division.

227. $\frac{49a^{14}b^{10}c^{15}}{1122d^{26}f^{19}g^{17}}$. **228.** $\frac{546a^9b^5cd^5f^5g^3}{319}$.

229. $442abc^8m^3p^5q^2$. **230.** $\frac{3a^3b^4}{7c^5d^6}$.

231. $\frac{38a^m\ b^n\ c^q\ d^{5r}\ f^{3s}\ g^t}{25}$.

232. $\frac{2304a^7b^3c^9g^2m^7}{6000d^4f^{14}}$. **233.** $\frac{3a^2b^4c^6}{5d^7f^2} + \frac{7a^9g^6}{11x^3y^2}$.

234. $\frac{2,4a^3y^2}{x^2b} - \frac{0,1x^2y^3}{a^2b^2} - 4,2a^4x^3$.

235. $\frac{5a^2x}{5by^2} + \frac{2a^3b^2}{7xy}$. **236.** $\frac{3a^2x}{2by^2} - \frac{2ab^2}{5x^2y}$.

Combinacion de las operaciones anteriores.

237. $$\frac{\left\{8a^3b + 4a^7b^2 + 20a^6b^3 + 4a^5b^4 + 16a^4b^5 - 4a^3b^6 + 4a^2b^7 - 4ab^8 - a^7b + a^6b^2 + a^5b^3 - a^3b^5 - a^2b^6 + ab^7\right\}}{2a^6 + a^5b - a^4b^2 - 2a^2b^4 - ab^5 + b^6}.$$

238. $$\frac{a^2 + 2a + ab + 2b + a^8 - 2a^5b^3 - 4a^7 + 8a^4b^3 - 4ab^6 + a^2b^6 + 4a^6 - 8a^3b^3 + 4b^6}{a^5b - 2a^4b - a^2b^4 + 2ab^4}.$$

239. $$\frac{2a^2 + 4a + 2ab + 4b - 4a^4b + 4ab^4 + 4a^3b - 4b^4 + a^5b - a^2b^4}{2a^5b - 2a^2b^4 - 4a^4b + 4ab^4}.$$

240. $$\left\{\frac{a^3 - b^3}{a^3 + b^3}\right\}^2 \times \frac{(a-b)^5}{\left\{a+b\right\}\left\{a^3+b^2\right\}^2}.$$

241. $$\left\{\frac{(a^2+ab+b^2)\ (a^2+b^2)}{a+b}\right\}^2.$$

242. $$\frac{\left\{a-b\right\}\left\{a-c\right\}\left\{b-c\right\}\left\{b^2+c^2\right\}^2}{\left\{a^2+b^2\right\}\left\{a+c\right\}\left\{b+c\right\}^3}.$$

243. $$\frac{\left\{a+b\right\}^2\left\{a^2-b^2\right\}^2}{(a^2+b^2)\ (a^4-c^4)}.$$

244. $\dfrac{-2a^8+112a^6-2158a^4+16428a^2-45200}{11a^7+80a^6+10a^5-982a^4-1609a^3+2098a^2+5952a+1440}$

ELEVACION A POTENCIAS.

Cuadrados.

245. $4a^2b^4c^6-4a^4b^5c^5+a^6b^2c^4$.

246. $169a^2x^4+182a^5x^5+49a^4x^2$.

247. $9a^{10}b^8c^6x^4-42a^7b^7c^7x^7+49a^4b^6c^8x^{10}$.

248. $4a^2b^4x^6+0,8a^4b^4x^4+0,04a^6b^4x^2$.

249. $6,25a^4x^6+26a^5x^5+27,04a^6x^4$.

250. $25a^{10}x^8+46a^8x^6+9a^6x^4+40a^9x^7+24a^7x^5$.

251. $9a^4b^4c^2+25a^2b^6c^4+4a^6b^4c^4-30a^5b^5c^5+12a^5b^4c^5-20a^4b^5c^4$.

252. $9a^6b^4x^2+4a^4b^2x^6+25a^2b^6x^4-12a^5b^5x^4+30a^4b^5x^5-20a^5b^4x^5$.

253. $0,04x^2y^4z^6+0,09x^4y^6z^2+0,25x^6y^2z^4-0,12x^5y^5z^4+0,2x^4y^5z^5-0,3x^5y^4z^5$.

254. $5,29a^6b^4c^2+5,76a^4b^2c^6+11,56a^2b^6c^4-11,04a^5b^5c^4-15,64a^4b^5c^5+16,32a^5b^4c^5$.

255. $9a^{14}x^4+\frac{2295}{1782}a^6x^8+\frac{25}{121}a^2x^{10}+\frac{9}{2}a^{12}x^5+\frac{251}{48}a^{10}x^6+\frac{257}{66}a^8x^7+\frac{70}{99}a^4x^9$.

256. $5{,}29a^2x^{10} + \frac{3412}{225}a^6x^{14} + \frac{49}{81}a^{14}x^{22} - \frac{46}{15}a^4x^{12} - \frac{353}{45}a^8x^{16} + \frac{7612}{675}a^{10}x^{18} - \frac{224}{45}a^{12}x^{20}$.

Cubos.

257. $8a^3b^6c^9 + 12a^5b^5c^8 + 6a^7b^4c^7 + a^9b^3c^6$.

258. $2197a^3x^6 + 3549a^4x^5 + 1911a^5x^4 + 343a^6x^3$.

259. $27a^{15}b^{12}c^9x^6 - 189a^{12}b^{11}c^{10}x^9 + 441a^9b^{10}c^{11}x^{12} - 343a^6b^9c^{12}x^{15}$.

260. $8a^3b^6x^9 + 2{,}4a^5b^6x^7 + 0{,}24a^7b^6x^5 + 0{,}008a^9b^6x^3$.

261. $15{,}625a^6x^9 + 97{,}5a^7x^8 + 202{,}8a^8x^7 + 140{,}608a^9x^6$.

262. $125a^{15}x^{12} + 300a^{14}x^{11} + 465a^{13}x^{10} + 424a^{12}x^9 + 279a^{11}x^8 + 108a^{10}x^7 + 27a^9x^6$.

263. $27a^6b^6c^3 + 225a^4b^8c^3 + 36a^8b^6c^3 - 135a^5b^7c^4 + 54a^7b^6c^4 - 180a^6b^7c^3 - 125a^3b^9c^6 - 60a^7b^7c^6 + 150a^5b^8c^6 + 8a^9b^6c^6$.

264. $27a^9b^6x^3 + 36a^7b^4x^7 + 225a^5b^8x^3 - 54a^8b^5x^3 + 135a^7b^7x^4 - 180a^6b^6x^6 - 8a^6b^3x^9 - 150a^4b^7x^7 + 60a^5b^5x^8 + 125a^3b^9x^6$.

265. $0{,}008x^3y^6z^9 - 0{,}027x^6y^9z^3 + 0{,}125x^9y^3z^6 - 0{,}036x^4y^7z^7 + 0{,}06x^5y^3z^8 + 0{,}135x^7y^7z^4 + 0{,}054x^5y^8z^3 + 0{,}15x^7y^4z^7 - 0{,}225x^8y^5z^3 - 0{,}18x^6y^6z^6$.

266. $12{,}167a^9b^6c^3 + 39{,}744a^7b^4c^7 + 79{,}764a^5b^8c^5 - 38{,}088a^8b^5c^5 - 53{,}958a^7b^7c^4 + 112{,}608a^6b^6c^6 - 13{,}824a^6b^3c^9 - 83{,}232a^4b^7c^7 - 58{,}752a^5b^5c^8 - 39{,}304a^3b^9c^6.$

Cuartas potencias.

267. $16a^4b^8c^{12} + 32a^6b^7c^{11} + 24a^8b^6c^{10} + 8a^{10}b^5c^9 + a^{12}b^4c^8.$

268. $28561a^4x^8 + 61516a^5x^7 + 49686a^6x^6 + 17836a^7x^5 + 2401a^8x^4.$

269. $81a^{20}b^{16}c^{12}x^8 - 756a^{17}b^{15}c^{13}x^{11} + 2646a^{14}b^{14}c^{14}x^{14} - 4116a^{11}b^{13}c^{15}x^{17} + 2401a^8b^{12}c^{16}x^{20}.$

270. $16a^4b^8x^{12} + 6{,}4a^6b^8x^{10} + 0{,}96a^8b^8x^8 + 0{,}064a^{10}b^8x^6 + 0{,}0016a^{12}b^8x^4.$

271. $39{,}0625a^8x^{12} + 325a^9x^{11} + 1014a^{10}x^{10} + 1406{,}08a^{11}x^9 + 731{,}1616a^{12}x^8.$

272. $81a^8b^8c^4 + 625a^4b^{12}c^8 + 16a^{12}b^8c^8 + 1350a^6b^{10}c^6 + 216a^{10}b^8c^6 + 600a^8b^{10}c^8 - 540a^7b^9c^5 + 216a^9b^8c^5 - 1080a^8b^9c^6 - 1500a^5b^{11}c^7 + 1800a^7b^{10}c^7 - 1000a^6b^{11}c^8 - 720a^9b^9c^7 + 96a^{11}b^8c^7 - 160a^{10}b^9c^8.$

273. $81a^{12}b^8x^4 + 16a^8b^4x^{12} + 625a^4b^{12}x^8 + 216a^{10}b^6x^8 + 1350a^8b^{10}x^6 + 600a^6b^8x^{10} - 216a^{11}b^7x^6 + 540a^{10}b^9x^5 - 1080a^9b^8x^7 - 96a^9b^5x^{10} + 720a^8b^7x^9 - 160a^7b^6x^{11} - 1800a^7b^9x^8 + 1500a^6b^{11}x^7 - 1000a^5b^{10}x^9.$

274. $0{,}0016x^4y^8z^{12} + 0{,}0081x^8y^{12}z^4 + 0{,}0625x^{12}y^4z^8 + 0{,}0216x^6y^{10}z^8 + 0{,}06x^8y^6z^{10} + 0{,}135x^{10}y^8z^6 - 0{,}0096x^5y^9z^{10} + 0{,}016x^6y^7z^{11} - 0{,}072x^7y^8z^9 - 0{,}0216x^7y^{11}z^6 + 0{,}108x^8y^9z^7 - 0{,}054x^9y^{10}z^5 - 0{,}18x^9y^7z^8 + 0{,}1x^{10}y^5z^9 - 0{,}15x^{11}y^6z^7.$

275. $27{,}9841a^{12}b^8c^4 + 33{,}1776a^8b^4c^{12} + 133{,}6336a^4b^{12}c^8 + 182{,}8224a^{10}b^6c^8 + 366{,}9144a^8b^{10}c^6 + 399{,}5136a^6b^8c^{10} - 116{,}8032a^{11}b^7c^6 - 165{,}4712a^{10}b^9c^5 + 517{,}9968a^9b^8c^7 - 127{,}1808a^9b^5c^{10} - 540{,}5184a^8b^7c^9 + 188{,}0064a^7b^6c^{11} - 765{,}7344a^7b^9c^8 - 361{,}5968a^6b^{11}c^7 + 377{,}3184a^5b^{10}c^9.$

276. $16a^{16}x^4 + 19{,}2a^{15}x^5 - 7{,}36a^{14}x^6 - 115{,}072a^{13}x^7 - 90{,}3504a^{12}x^8 + 52{,}32a^{11}x^9 + 288{,}6152a^{10}x^{10} + 134{,}868a^9x^{11} - 106{,}4591a^8x^{12} - 297{,}408a^7x^{13} - 63{,}2832a^6x^{14} + 65{,}536a^5x^{15} + 104{,}8576a^4x^{16}.$

Quintas potencias.

277. $243a^{25}b^{20}c^{15}x^{10} - 2835a^{22}b^{19}c^{16}x^{15} + 13230a^{19}b^{18}c^{17}x^{16} - 30870a^{16}b^{17}c^{18}x^{19} + 36015a^{13}b^{16}c^{19}x^{22} - 16807a^{10}b^{15}c^{20}x^{25}$.

278. $371293a^{5}x^{10} + 999635a^{6}x^{9} + 1076530a^{7}x^{8} + 579670a^{8}x^{7} + 156065a^{9}x^{6} + 16807a^{10}x^{5}$.

279. $32a^{5}b^{10}x^{15} + 16a^{7}b^{10}x^{13} + 3{,}2a^{9}b^{10}x^{11} + 0{,}32a^{11}b^{10}x^{9} + 0{,}016a^{13}b^{10}x^{7} + 0{,}00032a^{15}b^{10}x^{5}$.

280. $97{,}65625a^{10}x^{15} + 1015{,}625a^{11}x^{14} + 4225a^{12}x^{13} + 8788a^{13}x^{12} + 9139{,}52a^{14}x^{11} + 3802{,}04032a^{15}x^{10}$.

281. $0{,}00032a^{35}x^{25}y^{15} - 0{,}012a^{31}x^{24}y^{7} + \frac{0{,}18a^{27}x^{23}}{y} - \frac{1{,}35a^{23}x^{22}}{y^{9}} + \frac{5{,}0625a^{19}x^{21}}{y^{17}} - \frac{7{,}59375a^{15}x^{20}}{y^{25}}$.

282. $32a^{5}b^{10}c^{15} + 243a^{10}b^{13}c^{5} + 405a^{11}b^{15}c^{6} + 270a^{12}b^{11}c^{7} + 90a^{13}b^{9}c^{8} + 15a^{14}b^{7}c^{9} + a^{15}b^{5}c^{10} + 240a^{6}b^{11}c^{13} + 80a^{7}b^{9}c^{14} + 720a^{7}b^{12}c^{11} + 480a^{8}b^{10}c^{12} + 80a^{9}b^{8}c^{13} + 1080a^{8}b^{13}c^{9} + 1080a^{9}b^{11}c^{10} + 360a^{10}b^{9}c^{11} + 40a^{11}b^{7}c^{12} + 810a^{9}b^{14}c^{7} + 1080a^{10}b^{12}c^{8} + 540a^{11}b^{10}c^{9} + 120a^{12}b^{8}c^{10} + 10a^{13}b^{6}c^{11}$.

283. $a^5b^{10}c^5|32a^{10}c^5+240a^9c^4-400a^8bc^5+720a^8c^3$
$-2400\,a^7bc^4+2000\,a^6b^2c^5+1080\,a^7c^2$
$-5400\,a^6bc^3+9000a^5b^2c^4-5000a^4b^3c^5+$
$810\,a^6c-5400\,a^5bc^2+13500\,a^4b^2c^3$
$-15000\,a^3b^3c^4+6250\,a^2b^4c^5+243\,a^5$
$-2025a^4bc+6750\,a^3b^2c^2-11250a^2b^3c^3+$
$9375ab^4c^4-3125b^5c^5|.$

284. $a^5b^5x^5|243a^{10}b^5-810a^9b^4x^2+2025a^8b^6x+$
$1080\,a^8b^3x^4-5400\,a^7b^5x^5+6750\,a^6b^7x^2$
$-720a^7b^2x^6+5400a^6b^4x^5-13500a^5b^6x^4+$
$11250\,a^4b^8x^5+240\,a^6bx^8-2400a^5b^3x^7+$
$9000\,a^4b^5x^6-15000\,a^3b^7x^5+9375\,a^2b^9x^4$
$-32\,a^5x^{10}+400\,a^4b^2x^9-2000\,a^3b^4x^8+$
$5000a^2b^6x^7-6250ab^8x^6+3125b^{10}x^5|.$

285. $0{,}00032\,x^5y^{10}z^{15}+0{,}0081\,x^9y^{14}z^7+$
$0{,}0625x^{15}y^6z^{11}+0{,}0072x^7y^{12}z^{11}+0{,}02x^9y^8z^{13}$
$+0{,}135\,x^{11}y^{10}z^9-0{,}0024\,x^6y^{11}z^{13}+$
$0{,}004x^7y^9z^{14}-0{,}024x^8y^{10}z^{12}-0{,}0108x^8y^{15}z^9$
$+0{,}054\,x^9y^{11}z^{10}-0{,}054\,x^{10}y^{12}z^8$
$-0{,}09x^{10}y^9z^{11}+0{,}05x^{11}y^7z^{12}-0{,}15x^{12}y^8z^{10}$
$-0{,}00243\,x^{10}y^{15}z^5-0{,}09375\,x^{14}y^7z^9$
$-0{,}0675\,x^{12}y^{11}z^7+0{,}02025\,x^{11}y^{13}z^6+$
$0{,}1125x^{15}y^9z^8+0{,}03125x^{15}y^5z^{10}.$

286. $64{,}36343\,a^{15}b^{10}c^5-335{,}8092\,a^{14}b^9c^7$
$-475{,}7297a^{13}b^{11}c^6+700{,}8192a^{13}b^8c^9+$
$1985{,}6544a^{12}b^{10}c^8+1406{,}5052a^{11}b^{12}c^7$
$-731{,}2896\,a^{12}b^7c^{11}-3107{,}9808\,a^{11}b^9c^{10}$
$-4402{,}9728a^{10}b^{11}c^9-2079{,}1816\,a^9b^{13}c^8+$

$$381,5424a^{11}b^{6}c^{15}+2162,0736a^{10}b^{8}c^{12}+4594,4064a^{9}b^{10}c^{11}+4339,1616a^{8}b^{12}c^{10}+1536,7864a^{7}b^{14}c^{9}-79,62624a^{10}b^{5}c^{15}-564,0192a^{9}b^{7}c^{14}-1598,0544a^{8}b^{9}c^{13}-2263,9104a^{7}b^{11}c^{12}-1603,6032a^{6}b^{13}c^{11}-454,35424a^{5}b^{15}c^{10}.$$

287. $3125a^{25}x^{20}+12500a^{24}x^{19}+29375a^{23}x^{18}+52250a^{22}x^{17}+73650a^{21}x^{16}+86224a^{20}x^{15}+85990a^{19}x^{14}+73420a^{18}x^{13}+54225a^{17}x^{12}+34620a^{16}x^{11}+18923a^{15}x^{10}+8810a^{14}x^{9}+3400a^{13}x^{8}+1040a^{12}x^{7}+240a^{11}x^{6}+32a^{10}x^{5}.$

Sextas potencias.

288. $729a^{12}b^{18}c^{6}+7290a^{14}b^{18}c^{7}+30375a^{16}b^{18}c^{8}+67500a^{18}b^{18}c^{9}+84375a^{20}b^{18}c^{10}+56250a^{22}b^{18}c^{11}+15625a^{24}b^{18}c^{12}.$

289. $117649a^{30}b^{24}c^{18}x^{12}+403368a^{27}b^{23}c^{19}x^{15}+576240a^{24}b^{22}c^{20}x^{18}+439040a^{21}b^{21}c^{21}x^{21}+188160a^{18}b^{20}c^{22}x^{24}+43008a^{15}b^{19}c^{25}x^{27}+4096a^{12}b^{18}c^{24}x^{30}.$

290. $64a^{18}b^{12}x^{6}+38,4a^{16}b^{12}x^{8}+9,6a^{14}b^{12}x^{10}+1,28a^{12}b^{12}x^{12}+0,096a^{10}b^{12}x^{14}+0,00384a^{8}b^{12}x^{16}+0,000064a^{6}b^{12}x^{18}.$

291. $244,140625a^{42}b^{36}x^{30}-761,71875a^{41}b^{37}x^{33}+990,234375a^{40}b^{38}x^{36}-686,5625a^{39}b^{39}x^{39}+267,759375a^{38}b^{40}x^{42}-55,69395a^{37}b^{41}x^{45}+4,826809a^{36}b^{42}x^{48}.$

292. $729\,a^{30}x^{12} - 7290\,a^{29}x^{13} + 43497\,a^{28}x^{14}$
$- 176850\,a^{27}x^{15} + 547290\,a^{26}x^{16}$
$- 1319850\,a^{25}x^{17} + 2555785\,a^{24}x^{18}$
$- 3959550\,a^{23}x^{19} + 4925610\,a^{22}x^{20}$
$- 4774950\,a^{21}x^{21} + 3523257\,a^{20}x^{22}$
$- 1771470\,a^{19}x^{23} + 531441\,a^{18}x^{24}.$

293. $117649\,a^{6}x^{12} - 75631{,}5\,a^{7}x^{13} + 70679{,}4375\,a^{8}x^{14}$
$- 29905{,}3125\,a^{9}x^{15} + 15024{,}43359375\,a^{10}x^{16}$
$- 4488{,}873046875\,a^{11}x^{17} +$
$1511{,}056884765625\,a^{12}x^{18}$
$- 320{,}633789625\,a^{13}x^{19} +$
$76{,}6552734375\,a^{14}x^{20} - 10{,}8984375\,a^{15}x^{21} +$
$1{,}83984375\,a^{16}x^{22} - 0{,}140625\,a^{17}x^{23} +$
$0{,}015625\,a^{18}x^{24}.$

294. $\frac{64}{729}a^{42}x^{30} - \frac{64}{135}a^{41}x^{28} + \frac{16}{15}a^{40}x^{26} - \frac{32}{25}a^{39}x^{24} +$
$\frac{108}{125}a^{38}x^{22} - \frac{972}{3125}a^{37}x^{20} + \frac{729}{15625}a^{36}x^{18} - \frac{448}{729}a^{37}x^{32} +$
$\frac{224}{81}a^{36}x^{30} - \frac{224}{45}a^{35}x^{28} + \frac{112}{25}a^{34}x^{26} - \frac{252}{125}a^{33}x^{24} +$
$\frac{1134}{3125}a^{32}x^{22} + \frac{3920}{2187}a^{32}x^{34} - \frac{1568}{243}a^{31}x^{32} + \frac{392}{45}a^{30}x^{30}$
$- \frac{392}{75}a^{29}x^{28} + \frac{147}{125}a^{28}x^{26} - \frac{54880}{19683}a^{27}x^{36} +$
$\frac{5488}{729}a^{26}x^{34} - \frac{2744}{405}a^{25}x^{32} + \frac{1372}{675}a^{24}x^{30} + \frac{48020}{19683}a^{22}x^{38}$
$- \frac{9604}{2187}a^{21}x^{36} + \frac{2401}{1215}a^{20}x^{34} - \frac{67228}{59049}a^{17}x^{40} +$
$\frac{33614}{32805}a^{16}x^{38} + \frac{117649}{531441}a^{12}x^{42}.$

295. $0{,}015625\,x^{6}y^{18} - 0{,}28125\,x^{7}y^{17} +$
$1{,}509375\,x^{8}y^{16} + 0{,}5625\,x^{9}y^{15}$
$- 25{,}415625\,x^{10}y^{14} + 24{,}01875\,x^{11}y^{13} +$

$204,870625\,x^{12}\,y^{12} - 153,72\,x^{13}\,y^{11}$
$- 1041,024\,x^{14}\,y^{10} - 147,456\,x^{15}\,y^{9} +$
$2532,31104\,x^{16}\,y^{8} + 3019,89888\,x^{17}\,y^{7} +$
$1073,741824x^{18}y^{6}.$

296. $117649x^{18}y^{18} - 302526x^{18}y^{17} + 324135x^{18}y^{16}$
$- 185220x^{18}y^{15} + 59535x^{18}y^{14} - 10206x^{18}y^{13}$
$+ 729x^{18}y^{12} + 504210x^{17}y^{18} - 1282134x^{17}y^{17}$
$+ 1358280\,x^{17}\,y^{16} - 767340\,x^{17}\,y^{15} +$
$243810\,x^{17}y^{14} - 41310x^{17}y^{13} + 2916x^{17}\,y^{12} +$
$900375\,x^{16}y^{18} - 2263800\,x^{16}\,y^{17} +$
$2371110\,x^{16}\,y^{16} - 1324260\,x^{16}\,y^{15} +$
$415935x^{16}y^{14} - 69660x^{16}y^{13} + 4860x^{16}y^{12} +$
$857500\,x^{15}\,y^{18} - 2131500\,x^{15}\,y^{17} +$
$2207100\,x^{15}\,y^{16} - 1218580\,x^{15}\,y^{15} +$
$378360\,x^{15}y^{14} - 62640x^{15}y^{13} + 4320\,x^{15}y^{12} +$
$459375\,x^{14}\,y^{18} - 1128750\,x^{14}\,y^{17} +$
$1155375x^{14}y^{16} - 630600x^{14}y^{15} + 193560x^{14}y^{14}$
$- 31680x^{14}y^{13} + 2160x^{14}y^{12} + 131250x^{13}y^{18}$
$- 318750\,x^{13}\,y^{17} + 322500\,x^{13}\,y^{16}$
$- 174000x^{13}y^{15} + 52800x^{13}y^{14} - 8544x^{13}y^{13} +$
$576x^{13}y^{12} + 15625x^{12}y^{18} - 37500x^{12}y^{17} +$
$37500\,x^{12}\,y^{16} - 20000\,x^{12}\,y^{15} + 6000\,x^{12}\,y^{14}$
$- 960x^{12}y^{13} + 64x^{12}y^{12}.$

297. $x^{18}y^{18}|0,177978515625x^{6}y^{6} - 4,271484375x^{6}y^{5}$
$+ 42,714843 75x^{6}y^{4} - 227,8125x^{6}y^{3} +$
$683,4375x^{6}y^{2} - 1093,5x^{6}y + 729\,x^{6} +$
$0,284765625x^{5}y^{6} - 9,2548828125x^{5}y^{5} +$
$116,75390625\,x^{5}y^{4} - 751,78125x^{5}y^{3} +$
$2642,625x^{5}y^{2} - 4847,85x^{5}y + 3645x^{5} +$

$$0,18984375x^4y^6 - 7,78359375x^4y^5 + 123,8255859375x^4y^4 - 978,834375x^4y^3 + 4062,65625x^4y^2 - 8808,75x^4y + 7642,35x^4 + 0,0675x^3y^6 - 3,34125x^3y^5 + 65,255625x^3y^4 - 637,3434375x^3y^3 + 3262,78125x^3y^2 - 8353,125x^3y + 8437,5x^3 + 0,0135x^2y^6 - 0,783x^2y^5 + 18,27225x^2y^4 - 217,51875x^2y^3 + 1375,83984375x^2y^2 - 4324,21875x^2y + 5273,4375x^2 + 0,00144xy^6 - 0,09576xy^5 + 2,61xy^4 - 37,125xy^3 + 288,28125xy^2 - 1142,578125xy + 1757,8125x + 0,000064y^6 - 0,0048y^5 + 0,15y^4 - 2,5y^3 + 23,4375y^2 - 117,1875y + 244,140625\}.$$

Séptimas potencias.

298. $128x^7y^{21} - 1344x^8y^{19} + 6048x^9y^{17} - 15120x^{10}y^{15} + 22680x^{11}y^{13} - 20412x^{12}y^{11} + 10206x^{13}y^9 - 2187x^{14}y^7.$

299. $823543a^{28}b^{21}x^{14} - 4117715a^{26}b^{21}x^{13} + 8823675a^{24}b^{21}x^{12} - 10504375a^{22}b^{21}x^{11} + 7503125a^{20}b^{21}x^{10} - 3215625a^{18}b^{21}x^9 + 765625a^{16}b^{21}x^8 - 78125a^{14}b^{21}x^7.$

300. $\frac{128}{2187}a^7b^{21}c^{42} - \frac{224}{243}a^{12}b^{21}c^{37} + \frac{56}{9}a^{17}b^{21}c^{32} - \frac{70}{3}a^{22}b^{21}c^{27} + \frac{105}{2}a^{27}b^{21}c^{22} - \frac{567}{8}a^{32}b^{21}c^{17} + \frac{1701}{32}a^{37}b^{21}c^{12} - \frac{2187}{128}a^{42}b^{21}c^7.$

301. $0,13348388671875\, x^{14} y^{35} - 0,62292480468 75 x^{15} y^{32} + 1,2458496093 75 x^{16} y^{29} - 1,3842773437 5 x^{17} y^{26} + 0,9228515625 x^{18} y^{23} - 0,369140625 x^{19} y^{20} + 0,08203125 x^{20} y^{17} - 0,0078125 x^{21} y^{14}$.

302. $2187 x^{28} y^{35} - 12757,5 x^{31} y^{33} + 31893,75 x^{34} y^{31} - 44296,875 x^{37} y^{29} + 36914,0625 x^{40} y^{27} - 18457,03125 x^{43} y^{25} + 5126,953125 x^{46} y^{23} - 610,3515625 x^{49} y^{21}$.

303. $3435,9738368 a^{14} x^{35} - 3758,096384 a^{12} x^{33} y^{4} + 1761,60768 a^{10} x^{31} y^{8} - 458,752 a^{8} x^{29} y^{12} + 71,68 a^{6} x^{27} y^{16} - 6,72 a^{4} x^{25} y^{20} + 0,35 a^{2} x^{23} y^{24} - 0,0078125 x^{21} y^{28}$.

304. $0,0279936 a^{21} y^{14} + 0,979776 a^{20} x^{4} y^{12} + 14,69664 a^{19} x^{8} y^{10} + 122,472 a^{18} x^{12} y^{8} - 0,163296 a^{18} x^{2} y^{17} + 612,36 a^{17} x^{16} y^{6} - 4,89888 a^{17} x^{6} y^{15} + 1837,08 a^{16} x^{20} y^{4} - 61,236 a^{16} x^{10} y^{13} + 3061,8 a^{15} x^{24} y^{2} - 408,24 a^{15} x^{14} y^{11} + 0,40824 a^{15} x^{4} y^{20} - 1530,9 a^{14} x^{18} y^{9} + 10,206 a^{14} x^{8} y^{18} + 2187 a^{14} x^{28} - 3061,8 a^{13} x^{22} y^{7} + 102,06 a^{13} x^{12} y^{16} - 2551,5 a^{12} x^{26} y^{5} + 510,3 a^{12} x^{16} y^{14} - 0,567 a^{12} x^{6} y^{23} + 1275,75 a^{11} x^{20} y^{12} - 11,34 a^{11} x^{10} y^{21} + 1275,75 a^{10} x^{24} y^{10} - 85,05 a^{10} x^{14} y^{19} - 283,5 a^{9} x^{18} y^{17} + 0,4725 a^{9} x^{8} y^{26} - 354,375 a^{8} x^{22} y^{15} + 7,0875 a^{8} x^{12} y^{24} + 35,4375 a^{7} x^{16} y^{22} + 59,0625 a^{6} x^{20} y^{20} - 0,23625 a^{6} x^{10} y^{29}$

$$-2{,}3625a^5x^{14}y^{27} - 5{,}90625a^4x^{18}y^{25} + 0{,}065625a^3x^{12}y^{32} + 0{,}328125a^2x^{16}y^{30} - 0{,}0078125x^{14}y^{35}.$$

305. $0{,}0000128a^{35}x^{14} + 0{,}00001344a^{30}x^{16}y^5 - 0{,}000001344a^{30}x^{16}y^5 + 0{,}000006048a^{25}x^{18}y^6 - 0{,}0000012096a^{25}x^{18}y^8 + 0{,}0000000060480a^{25}x^{18}y^{10} + 0{,}000001512a^{20}x^{20}y^9 - 0{,}0000004536a^{20}x^{20}y^{11} + 0{,}0000000045360a^{20}x^{20}y^{13} - 0{,}0000000001512a^{20}x^{20}y^{15} + 0{,}0000002268a^{15}x^{22}y^{12} - 0{,}0000000090720a^{15}x^{22}y^{14} + 0{,}0000000013608a^{15}x^{22}y^{16} - 0{,}0000000009072a^{15}x^{22}y^{18} + 0{,}0000000002268a^{15}x^{22}y^{20} + 0{,}0000000204120a^{10}x^{24}y^{15} - 0{,}0000000102060a^{10}x^{24}y^{17} + 0{,}0000000020412a^{10}x^{24}y^{19} - 0{,}0000000020412a^{10}x^{24}y^{21} + 0{,}0000000010206a^{10}x^{24}y^{23} - 0{,}0000000000204120a^{10}x^{24}y^{25} + 0{,}0000000010206a^5x^{26}y^{18} - 0{,}0000000061236a^5x^{26}y^{20} + 0{,}0000000015309a^5x^{26}y^{22} - 0{,}0000000020412a^5x^{26}y^{24} + 0{,}0000000015309a^5x^{26}y^{26} - 0{,}0000000061236a^5x^{26}y^{28} + 0{,}0000000010206a^5x^{26}y^{30} + 0{,}0000000002187x^{28}y^{21} - 0{,}0000000001530 9x^{28}y^{23} + 0{,}0000000000459 27x^{28}y^{25}$

$$-0,0000000000000765\,45x^{28}y^{27}+$$
$$0,0000000000000765\,45x^{28}y^{29}$$
$$-0,0000000000000045927x^{28}y^{31}+$$
$$0,0000000000000015309x^{28}y^{33}$$
$$-0,0000000000000002187x^{28}y^{35}.$$

306. $-823543a^{28}b^{28}+1647086a^{27}b^{26}x$
$-1411788a^{26}b^{24}x^2-2470629a^{26}b^{25}x^3$
$-4117715a^{25}b^{27}x^2+672280a^{25}b^{22}x^3+$
$4235364a^{25}b^{23}x^4+7058940a^{24}b^{25}x^3$
$-192080a^{24}b^{20}x^4-3025260a^{24}b^{21}x^5$
$-3176523a^{24}b^{22}x^6-5042100a^{25}b^{25}x^4+$
$32928a^{25}b^{18}x^5-10588410a^{23}b^{24}x^5+$
$1152480a^{23}b^{19}x^6+4537890a^{23}b^{20}x^7$
$-8823675a^{22}b^{26}x^4+1920800a^{22}b^{21}x^5$
$-3136a^{22}b^{16}x^6+15126300a^{22}b^{22}x^6$
$-246960a^{22}b^{17}x^7-2593080a^{22}b^{18}x^8$
$-2268945a^{22}b^{19}x^9+12605250a^{21}b^{24}x^5$
$-411600a^{21}b^{19}x^6+128a^{21}b^{14}x^7$
$-8643600a^{21}b^{20}x^7+28224a^{21}b^{15}x^8$
$-11344725a^{21}b^{21}x^8+740880a^{21}b^{16}x^9+$
$2593080a^{21}b^{17}x^{10}-7203000a^{20}b^{22}x^6+$
$47040a^{20}b^{17}x^7-18907875a^{20}b^{23}x^7+$
$2469600a^{20}b^{18}x^8-1344a^{20}b^{15}x^9+$
$1296540a^{20}b^{19}x^9-105840a^{20}b^{14}x^{10}$
$-1111320a^{20}b^{15}x^{11}-972405a^{20}b^{16}x^{12}$
$-10504375a^{19}b^{25}x^6+2058000a^{19}b^{20}x^7$
$-2240a^{19}b^{15}x^8+21609000a^{19}b^{21}x^8$
$-352800a^{19}b^{16}x^9-5556600a^{19}b^{17}x^{10}$
$+6048a^{19}b^{12}x^{11}-6482700a^{19}b^{18}x^{11}$
$+211680a^{19}b^{13}x^{12}+833490a^{19}b^{14}x^{13}$
$+12005000a^{18}b^{23}x^7-294000a^{18}b^{18}x^8$

$$-9261000a^{18}b^{19}x^{9}+20160a^{18}b^{14}x^{10}$$
$$-16206750a^{18}b^{20}x^{10}+1058400a^{18}b^{15}x^{11}$$
$$+5556600a^{18}b^{16}x^{12}-15120a^{18}b^{11}x^{13}$$
$$-238140a^{18}b^{12}x^{14}-250047a^{18}b^{13}x^{15}$$
$$-5145000a^{17}b^{21}x^{8}+16800a^{17}b^{16}x^{9}$$
$$-18007500a^{17}b^{22}x^{9}+1764000a^{17}b^{17}x^{10}$$
$$+13891500a^{17}b^{18}x^{11}-75600a^{17}b^{13}x^{12}$$
$$-1587600a^{17}b^{14}x^{13}-2083725a^{17}b^{15}x^{14}$$
$$+22680a^{17}b^{10}x^{15}+142884a^{17}b^{11}x^{16}$$
$$-7503125a^{16}b^{24}x^{8}+980000a^{16}b^{19}x^{9}$$
$$+15435000a^{16}b^{20}x^{10}-126000a^{16}b^{15}x^{11}$$
$$-3969000a^{16}b^{16}x^{12}-6945750a^{16}b^{17}x^{13}+$$
$$151200a^{16}b^{12}x^{14}+1190700a^{16}b^{13}x^{15}$$
$$-20412a^{16}b^{9}x^{17}-35721a^{16}b^{10}x^{18}+$$
$$6431250a^{15}b^{22}x^{9}-70000a^{15}b^{17}x^{10}$$
$$-4410000a^{15}b^{18}x^{11}-11576250a^{15}b^{19}x^{12}$$
$$+378000a^{15}b^{14}x^{13}+3969000a^{15}b^{15}x^{14}$$
$$-170100a^{15}b^{11}x^{16}-357210a^{15}b^{12}x^{17}+$$
$$10206a^{15}b^{8}x^{19}-1837500a^{14}b^{20}x^{10}$$
$$-9646875a^{14}b^{21}x^{11}+420000a^{14}b^{16}x^{12}$$
$$+6615000a^{14}b^{17}x^{13}-567000a^{14}b^{15}x^{13}$$
$$-1488375a^{14}b^{14}x^{16}+102060a^{14}b^{10}x^{18}$$
$$-2187a^{14}b^{7}x^{21}-3215625a^{13}b^{23}x^{10}+$$
$$175000a^{13}b^{18}x^{11}+5512500a^{13}b^{19}x^{12}$$
$$-945000a^{13}b^{15}x^{14}-3307500a^{13}b^{16}x^{15}$$
$$+425250a^{13}b^{12}x^{17}-25515a^{13}b^{9}x^{20}+$$
$$1837500a^{12}b^{21}x^{11}-787500a^{12}b^{17}x^{13}$$
$$-4134375a^{12}b^{18}x^{14}+945000a^{12}b^{14}x^{16}$$
$$-127575a^{12}b^{11}x^{19}-262500a^{11}b^{19}x^{12}$$
$$-2756250a^{11}b^{20}x^{15}+1181250a^{11}b^{16}x^{15}$$
$$-354375a^{11}b^{15}x^{18}-765625a^{10}b^{22}x^{12}$$
$$+787500a^{10}b^{18}x^{14}-590625a^{10}b^{15}x^{17}$$

$$+\,218750a^{9}b^{20}x^{13} - 590625a^{9}b^{17}x^{16}$$
$$-328125a^{8}b^{19}x^{15} - 78125a^{7}b^{21}x^{14}.$$

307. $249{,}4357888a^{7m}x^{7m} + 1825{,}4164544a^{7m}x^{6m+4}$
$+ 5725{,}1697888a^{7m}x^{5m+8}$
$+ 9975{,}674632\,a^{7m}x^{4m+12}$
$+ 10429{,}1143888a^{7m}x^{3m+16}$
$+ 6541{,}8990252a^{7m}x^{2m+20}$
$+ 2279{,}7526906\,a^{7m}x^{m+24}$
$+ 340{,}4825447\,a^{7m}x^{28}$
$- 158{,}7318656\,a^{6m+4}x^{7m}$
$- 995{,}6817024\,a^{6m+4}x^{6m+4}$
$- 2602{,}3499044\,a^{6m+4}x^{5m+8}$
$- 3627{,}5180488\,a^{6m+4}x^{4m+12}$
$- 2844{,}3039244\,a^{6m+4}x^{3m+16}$
$- 1189{,}4361864\,a^{6m+4}x^{2m+20}$
$- 207{,}2502446\,a^{6m+4}x^{m+24}$
$+ 396{,}8296644\,a^{6m+3}x^{6m+2}$
$+ 2489{,}2042566\,a^{6m+3}x^{5m+6}$
$+ 6505{,}8747676\,a^{6m+3}x^{4m+10}$
$+ 9068{,}7951272\,a^{6m+3}x^{3m+14}$
$+ 7110{,}7598172\,a^{6m+3}x^{2m+18}$
$+ 2973{,}5904666\,a^{6m+3}x^{m+22}$
$+ 518{,}1256115\,a^{6m+3}x^{26}$
$+ 43{,}2905088\,a^{5m+8}x^{7m}$
$+ 226{,}2912966\,a^{5m+8}x^{6m+4}$
$+ 473{,}1545288\,a^{5m+8}x^{5m+8}$
$+ 494{,}6615522\,a^{5m+8}x^{4m+12}$
$+ 258{,}5730844\,a^{5m+8}x^{3m+16}$
$+ 54{,}0652812\,a^{5m+8}x^{2m+20}$
$- 216{,}4525444\,a^{5m+7}x^{6m+2}$
$- 1131{,}4564848\,a^{5m+7}x^{5m+6}$

$$
\begin{aligned}
&- 2365,77264\, a^{5m+7} x^{4m+10} \\
&- 2473,30776\, a^{5m+7} x^{3m+14} \\
&- 1292,86542\, a^{5m+7} x^{2m+18} \\
&- 270,326406\, a^{5m+7} x^{m+22} \\
&+ 270,56568\, a^{5m+6} x^{5m+4} \\
&+ 1414,3206\, a^{5m+6} x^{4m+8} \\
&+ 2957,2158\, a^{5m+6} x^{3m+12} \\
&+ 3091,63477\, a^{5m+6} x^{2m+16} \\
&+ 1616,081775\, a^{5m+6} x^{m+20} \\
&+ 337,90800075\, a^{5m+6} x^{24} \\
&- 6,55916\,8\, a^{4m+12} x^{7m} \\
&- 27,4292488\, a^{4m+12} x^{6m+4} \\
&- 43,0140488\, a^{4m+12} x^{5m+8} \\
&- 29,9794888\, a^{4m+12} x^{4m+12} \\
&- 7,8355488\, a^{4m+12} x^{3m+16} \\
&+ 49,193761\, a^{4m+11} x^{6m+2} \\
&+ 205,719361\, a^{4m+11} x^{5m+6} \\
&+ 322,605361\, a^{4m+11} x^{4m+10} \\
&+ 224,846161\, a^{4m+11} x^{3m+14} \\
&+ 58,7666\,1\, a^{4m+11} x^{2m+18} \\
&- 122,98441\, a^{4m+10} x^{5m+4} \\
&- 514,29841\, a^{4m+10} x^{4m+8} \\
&- 8033,11741\, a^{4m+10} x^{3m+12} \\
&- 562,11541\, a^{4m+10} x^{2m+16} \\
&- 146,916525\, a^{4m+10} x^{m+20} \\
&+ 102,4871\, a^{4m+9} x^{4m+6} \\
&+ 428,5821\, a^{4m+9} x^{3m+10} \\
&+ 672,0941\, a^{4m+9} x^{2m+14} \\
&+ 468,4295\, a^{4m+9} x^{m+18} \\
&+ 122,430437\,5\, a^{4m+9} x^{22} \\
&+ 0,59628\,8\, a^{3m+16} x^{7m} \\
&+ 1,8701761\, a^{3m+16} x^{6m+4}
\end{aligned}
$$

$$
\begin{aligned}
&+1{,}955184\,a^{3m+16}x^{5m+8}\\
&+0{,}681352\,a^{3m+16}x^{4m+12}\\
&-5{,}96288\,a^{3m+15}x^{6m+2}-18{,}70176\,a^{3m+15}x^{5m+6}\\
&-19{,}55184\,a^{3m+15}x^{4m+10}-6{,}81352\,a^{3m+15}x^{3m+14}\\
&+22{,}3608\,a^{3m+14}x^{5m+4}+70{,}1316\,a^{3m+14}x^{4m+8}\\
&+73{,}3194\,a^{3m+14}x^{3m+12}+25{,}5507\,a^{3m+14}x^{2m+16}\\
&-37{,}268\,a^{3m+13}x^{4m+6}-116{,}886\,a^{3m+13}x^{3m+10}\\
&-122{,}199\,a^{3m+13}x^{2m+14}-42{,}5845\,a^{3m+13}x^{m+18}\\
&+23{,}2925\,a^{3m+12}x^{3m+8}+73{,}05375\,a^{3m+12}x^{2m+12}\\
&+76{,}374375\,a^{3m+12}x^{m+16}+26{,}6153125\,a^{3m+12}x^{20}\\
&-0{,}0325248\,a^{2m+20}x^{7m}-0{,}0680064\,a^{2m+20}x^{6m+4}\\
&-0{,}0355488\,a^{2m+20}x^{5m+8}+0{,}40656\,a^{2m+19}x^{6m+2}\\
&+0{,}85008\,a^{2m+19}x^{5m+6}+0{,}44436\,a^{2m+19}x^{4m+10}\\
&-2{,}0328\,a^{2m+18}x^{5m+4}-4{,}2504\,a^{2m+18}x^{4m+8}\\
&-2{,}2218\,a^{2m+18}x^{3m+12}+5{,}082\,a^{2m+17}x^{4m+6}\\
&+10{,}626\,a^{2m+17}x^{3m+10}+5{,}5545\,a^{2m+17}x^{2m+14}\\
&-6{,}3525\,a^{2m+16}x^{3m+8}-13{,}2825\,a^{2m+16}x^{2m+12}\\
&-6{,}943125\,a^{2m+16}x^{m+16}+3{,}17625\,a^{2m+15}x^{2m+10}\\
&+6{,}64125\,a^{2m+15}x^{m+14}+3{,}4715625\,a^{2m+15}x^{18}\\
&+0{,}0009856\,a^{m+24}x^{7m}+0{,}0010304\,a^{m+24}x^{6m+4}\\
&-0{,}014784\,a^{m+23}x^{6m+2}-0{,}015456\,a^{m+23}x^{5m+6}\\
&+0{,}0924\,a^{m+22}x^{5m+4}+0{,}0966\,a^{m+22}x^{4m+8}\\
&-0{,}308\,a^{m+21}x^{4m+6}-0{,}322\,a^{m+21}x^{3m+10}\\
&+0{,}5775\,a^{m+20}x^{3m+8}+0{,}60375\,a^{m+20}x^{2m+12}\\
&-0{,}5775\,a^{m+19}x^{2m+10}-0{,}60375\,a^{m+19}x^{m+14}\\
&+0{,}240625\,a^{m+18}x^{m+12}+0{,}2515625\,a^{m+18}x^{16}\\
&-0{,}0000128\,a^{28}x^{7m}+0{,}000224\,a^{27}x^{6m+2}\\
&-0{,}00168\,a^{26}x^{5m+4}+0{,}007\,a^{25}x^{4m+6}\\
&-0{,}0175\,a^{24}x^{3m+8}+0{,}02625\,a^{23}x^{2m+10}\\
&\quad-0{,}021875\,a^{22}x^{m+12}+0{,}0078125\,a^{21}x^{14}.
\end{aligned}
$$

Extraccion de raices.

308. $23a^7x^3+47a^5x^7$. **309.** $2{,}5a^4x-3{,}2ax^4$.

310. $\frac{13}{17}x^9y^6-\frac{17}{13}x^6y^9$.

311. $29a^7x^3+31a^6x^4+17a^5x^5$.

312. $2{,}7a^5x^2+3{,}2a^2x^3+3{,}3ax^4$.

313. $\frac{37}{75}a^5x^4y^3-\frac{25}{52}a^4x^4y^4-\frac{26}{62}a^3x^4y^5$.

314. $39a^5x-37a^4x^2+31a^3x^3-29a^2x^4$.

315. $2{,}34a^7x^3y-3{,}25a^5x^6y^7+9{,}5a^3x^2y^5$
$-2{,}25ax^5y^6$.

316. $\frac{234}{569}a^2b^4+\frac{125}{457}a^3x^2+\frac{231}{322}x^4y^3+\frac{127}{128}a^5x^3y^5$.

317. $50a^2x^3+25a^3x^2+\frac{2}{5}ax^4+0{,}5a^4x+8x^5$.

318. $23a^7x^3+17a^5x^5$. **319.** $81x^4y^7-18x^5y^6$.

320. $3{,}5x^9y^3z^4-2{,}7x^4y^3z^9$.

321. $\frac{33}{723}a^8b^4c^3+\frac{17}{25}a^9x^4y^3$.

322. $23a^3x^2y+56a^2xy^3+25ax^3y^2$.

323. $5{,}23a^8b^3x^3+2{,}53a^3b^3x^8+2{,}2a^3b^8x^3$.

324. $0{,}23a^7b^3c^3+0{,}5a^3b^3c^7+0{,}25a^3b^7c^3$.

325. $\frac{23a^7x^5}{111b^4y^3} + \frac{17a^4x^3}{19b^5y^2} + \frac{11a^2x^7}{13b^2y^6}$.

326. $5a^5b^2x + 4a^2bx^3 + 3ab^5x^2 + 2a^5x^3$.

327. $7a^5b^4c^3x^2 + 6a^4b^5c^2x^5 + 5a^3b^2cx^8 + 4a^2bc^3x^8$.

328. $29a^5x^4 + 37a^3x^6$.

329. $37a^7b^5x^4 - 50a^4b^7x^5$.

330. $2x^5y^4 + 3x^4y^5 + 4x^6y^5$.

331. $5a^5x^4 + 4a^4x^3 + 3a^3x^2$.

332. $26a^5b^4c^3 + 21a^4b^3x^2 + 16a^3b^2c$.

333. $0,5a^5x^4 - 0,2a^4x^5$.

334. $3,5a^{10}x^5 - 2,5a^8x^7$.

335. $\frac{21a^7b^5}{26c^4d^3} + \frac{26a^5c^7}{21b^4d^5}$. **336.** $\frac{15a^3x^2}{16b^4y^3} + \frac{16a^2y^3}{15b^3x^2}$.

337. $\frac{23a^6x^4}{24b^3y^2} + \frac{24a^3y^2}{25b^4x^3} + \frac{23x^4y^3}{25a^5b^4}$.

338. $5a^5x^4 + 4a^4x^5$. **339.** $2ab^2c^3 + a^3bc^2$.

340. $a^7x^4 + a^5x^6$. **341.** $7a^9x^5 - 9a^7x^7$.

342. $7a^5x^5 + 5a^4x^4 + 3a^2x^6$.

343 $3a^7x^5y^3 + 2a^5x^3y^7 + a^3x^7y^5$.

344. $0,1a^5x^5 - 0,2a^2x^6$. **345.** $0,3a^5x^2 + 0,5a^4x$

346. $\frac{3}{4}x^5y^4 - \frac{4}{5}x^4y^5$. **347.** $\frac{4a^3b^2}{5x^4y^3} - \frac{5a^2x^3}{5b^3y^4}$.

348. $a^5x^4 - a^4x^5$. **349.** $2a^4x^3 + by$.

350. $2a^7x^6-3a^6x^7$.

351. $3a^9x^5-5a^7y^7$.

352. $3a^7b^6x^5+4a^6b^5x^4+7a^5b^4x^3$.

353. $2a^5x^4y^3+3a^4x^3y^5+6a^3x^5y^4$.

354. $0,5a^6x^4+0,2a^4x^6$.

355. $2ax^2y^3+0,2a^3xy^2$.

356. $\frac{7a^6x^3}{9b^2y}+\frac{9b^2y}{7a^6x^3}$. **357.** $\frac{11a^5x^4}{13b^4y^3}-\frac{7c^2d}{17x^3y^4}$.

358. $7x^5y^5+4b^3z^2$. **359.** $3a^5b^2+0,5c^2d^5$.

360. $5a^3x^2-0,5y^2z^3$. **361.** $3ax^3-\frac{1}{3}b^2y^2$.

362. $\frac{3}{4}a^3x^2+\frac{4}{3}b^2y^3$.

363. $2a^7x^6+3a^6x^7+5b^3y^8$.

364. $ax^2\{1+ax\{1+ax\}\}$.

365. $3a^2x^2-6a^3x^3+9a^4x^4$.

366. $\frac{a^3x^2}{b^2y^3}+\frac{b^3y^2}{a^2x^3}$. **367.** $\frac{2a^5b^3}{3x^3y^3}+\frac{3a^2x^6}{2b^6y^2}$.

RADICALES REALES.

Suma.

368. $2ab+18c\sqrt{3}-2b\sqrt[3]{2}+3c$.

369. $20+\{9a^3+10a^2-14a\}\sqrt{5a}+8ab\left\{c-5\sqrt[3]{2b^2}\right\}$.

370. $a\{9+35a^5\}\sqrt{7a}+b^3\{6b-5a\}\sqrt[3]{7a}+ab\{2+ab\}\sqrt[4]{7ab}$.

371. $5a^2b\sqrt{2}+8ab^2\sqrt[3]{3}-3a^2b^2\sqrt[4]{6}$.

372. $21a^3b^2c\sqrt{5}-19a^2b^3c\sqrt[3]{2}+27ab^2c^3\sqrt[4]{4}$.

373. $12a^3b^4c^3\sqrt{2abc}+a^3b^2c\sqrt[3]{3ab^2}-11ab^2c^3\sqrt[4]{5b^3}$.

Resta.

374. $2a^3b^4c^7\sqrt{3ab}+6a^2b^5c^6\sqrt[3]{2a^2c}+5a^3b^3c\sqrt[4]{9bc^2}$.

375. $19ab^2c^3\sqrt{bc}-7a^4c^3\sqrt[3]{5a^2}-17a^4b^3c^2\sqrt[5]{7b^3c^3}$.

376. $\underline{0}$.

377. $3a\{1-a^3\}\sqrt{bc}+8b\sqrt[3]{a^2b}-\{7c^3+5a^3\}\sqrt[4]{b^3c^2}$.

378. $ab^2c\{8a^2-5c^2\}\sqrt{2}-a^3\{3a^2+2b^2\}\sqrt[3]{3}+\{8+9a^4b^3c^2\}\sqrt[4]{4}$.

379. $ab^{\frac{2}{3}}\{7ac-4\}-8a^3bc^{\frac{3}{4}}$.

380. $a^2\left\{\{8+a\}\sqrt[3]{b^2c}+\{7a+4\}\sqrt[4]{bc^2}\right\}$.

381. $a^2b^2\{8a+5b-5\}\sqrt{b+c}+\{b+c\}\}8-3\{b+c\}$
$-2\{b-c\}\}\{b+c\}^{\frac{2}{3}}$.

Multiplicacion.

382. ab. **383.** $\{a+b\}\{c-d\}\sqrt[4]{\{a+b\}\{c-d\}}$.

384. $\sqrt{\{a^2-b^2\}} \times \sqrt[6]{a-b}$.

385. $\sqrt[3]{\{a^2-b^2\}^2} \times \sqrt[6]{a-b}$.

386. $\sqrt[12]{\{a^4-b^4\}^2\{a^2-b^2\}}$.

387. $9a^2\{a+b\}-25b^2\{a^2-b^2\}^{\frac{2}{3}}$.

388. $2b\{2a^3+a^2b+b^3\}$.

389. $2b^2\{a^4-b^4\}$.

390. $\sqrt[4]{\{a^6-b^6\}^3}+\{a^3-b^3\}\sqrt[12]{\{a^3-b^3\}^7}+\{a^3+$
$b^3\}\sqrt[12]{\{a^3+b^3\}^7}+\sqrt[6]{\{a^6-b^6\}^5}$.

391. $\sqrt{a^4-b^4}+\sqrt[6]{\{a^2-b^2\}^5}+\sqrt[6]{\{a^2+b^2\}^5}+\sqrt[3]{a^4-b^4}$

392. $\sqrt[3]{x^6-a^6}$.

393. $\sqrt[12]{\{x^7-ax^6-a^6x+a^7\}^2\{x^3+a^3\}}$.

394. $\sqrt[12]{\{x^6-a^6\}^2\{x^3-a^3\}^2\{x^2-a^2\}\{x-a\}}$.

395. $\sqrt{a^2-b^2}-\sqrt[3]{a^2-b^2}-\sqrt[4]{a^4-b^4}+\sqrt[6]{\{a-b\}^5}$
$-\sqrt[6]{\{a+b\}^5}+\sqrt[4]{\{a-b\}^3\{a+b\}}-\sqrt[12]{\{a+b\}^7\{a-b^3\}}$
$-\sqrt[4]{\{a^2+b^2\}\{a+b\}^2}-\sqrt[12]{\{a^2+b^2\}^3\{a-b\}^4}.$

396. $4\Big\{a\Big\{a\Big\{\{a^2-b\}-b^2\sqrt[3]{\{a^2-b^2\}^2}\Big\}$
$+2b\sqrt[6]{\{a^2-b\}^3\{a-b^2\}^2}\Big\}+b^2\sqrt[5]{\{a-b^2\}^2}\Big\}.$

Division.

397. $\sqrt[12]{\{a^2-b^2\}\left\{\frac{a+b}{a^2+ab+b^2}\right\}^2}.$

398. $\sqrt[30]{\{a^5-b^5\}\left\{\frac{a^4+a^3b+a^2b^2+ab^3+b^4}{a^3+a^2b+ab^2+b^3}\right\}^2}.$

399. $\sqrt[12]{\frac{4ab}{a^2-b^2}\left\{\frac{4ab(a+2b)}{2a^2+5ab+2b^2-(a^2-b^2)^2}\right\}^2}.$

400. $\sqrt[20]{\frac{64ab(a^2+b^2)^2}{(a^2-b^2)^3}}.$

401. $\sqrt[6]{\frac{(a^2+b^2)^3(a^2-b^2)}{8(a^2+ab+b^2)^2}}.$

402. $\sqrt[18]{\frac{(24+a)(3a-8)8a}{9(a^2-64)}\times\left\{\frac{(24+a)\ (3a-8)\ (a^2+64)}{(24-a)\ (3a+8)\ (a^2-64)}\right\}^2}.$

403. $8a\sqrt{a^3-b^3}+9b\sqrt[3]{a^2-b^2}.$

404. $8a\sqrt{a^2+b^2}-2b+3c\sqrt{a^3+b^3}$.

405. $7ab+3c\sqrt{a+b}-5a^2+2b^2\sqrt[3]{a-b}$.

406. $(a-b)\sqrt{2}+(a+b)\sqrt{3}$.

407. $2a\sqrt[3]{a+b}-3c\sqrt{a-b}$.

408. $(a-b)\sqrt{3}-(a+b)\sqrt[5]{2}$.

Potencias.

409. $9a^2\Big\{a^2\,(5a^2-3b^2)+b^2\sqrt[3]{(2a^3-3b^2)^2}+2ab\sqrt[6]{(5a^2-3b^2)^3(2a^3-3b^2)^2}\Big\}$.

410. $5\Big\{a^2\big|9a^2(a+b)+12b^2\sqrt{a^2-b^2}\big|+4b^4(a-b)\Big\}$.

411. $5a^3\big|5a^3(a^2-b^2)-6b^3\sqrt[6]{(a^4-b^4)^2(a^2-b^2)}\big|+9b^6\sqrt[3]{(a^2+b^2)^2}$.

412. $(a+b)^2(a-b)\Big\{7\big\{7\sqrt[3]{a-b}+10\sqrt[6]{a-b}\big|+25\Big\}$.

413. $2(a^2-b^2)\big|a+\sqrt{a^2-b^2}\big|$.

414. $2(a^2-b^2)\big|a-\sqrt{a^2-b^2}\big|$.

415. $(a^3-b^3)^2(a-b)\big|\sqrt[3]{a-b}+1+2\sqrt[6]{a-b}\big|$.

416. $4\Big\{a\Big\{a\big\{2a+b+b^2\{a-2b\}\big\}+2b\Big\}\sqrt{4a^2-b^2}$
$+a\sqrt{2a^2-3ab-2b^2}+b\sqrt{2a^2-5ab+2b^2}\Big\}$
$+b^2\{2a-b\}\Big\}.$

417. $\{a^2-b^2\}\Big\{4\big\{\{a+b\}\sqrt{a-b}+$
$5\sqrt[12]{a-b}\sqrt[3]{\{a^2-b^2\}^2}+\{a^2+b^2\}\big\}5\{a^2+b^2\}$
$+2\sqrt[4]{a-b}\sqrt{a+b}+5\sqrt[6]{a+b}\sqrt{a-b}\big\}\Big\}$
$+25\{a-b\}\sqrt[3]{a+b}\}.$

418. $4b+3\Big\{\sqrt[3]{\{9a^2-4b^2\}\{3a-2b\}}$
$-\sqrt[3]{\{9a^2-4b^2\}\{3a+2b\}}\Big\}.$

419. $\underline{0}.$

420. $\{2a+b\}\Big\{\{2a+b\}\{2a+b\}\{2a+b\}\{3a+2b\}+3\{3a-2b\}\times$
$\sqrt[5]{\{3a+2b\}^2}\times\sqrt{2a-b}\Big\}+3\{2a-b\}\{3a-2b\}^2$
$\times\sqrt[3]{3a+2b}\Big\}+\{3a-2b\}^3\{2a-b\}\sqrt{2a-b}.$

421. $18a^2b^2\Big\{3a^2\Big\{\sqrt[6]{\{a^2-b^2\}^3\{a+b\}}+$
$3a^2\sqrt[12]{\{a+b\}^{11}\{a-b\}^3}\Big\}+2b^2\Big\{\{a-b\}\sqrt[3]{a+b}$
$+2b^2\{a-b\}\sqrt[4]{a^2-b^2}+3a^2\Big\{2\sqrt[12]{\{a^2-b^2\}^7\{a-b\}^2}$
$+3a^2\sqrt[6]{\{a+b\}^5\{a-b\}^5}+2b^2\sqrt{\{a-b\}^2\{a+b\}}$

$$+ 2a^2b^2\sqrt[4]{(a^2 - b^2)^3}\Big\}\Big\} + 27a^6(a + b) +$$

$$8b^6(a-b)\sqrt{a-b}.$$

422. $(a + b)\Big\{(a^2 + b^2)\Big\{(a + b)^2\sqrt{a^2 + b^2} +$

$$3(a^2 - b^2)\sqrt[3]{a^2 - b^2}\Big\} + (a - b)^2\Big\{3\sqrt[6]{(a^4 - b^4)^3(a^2 - b^2)}$$

$$+ (a - b)^2\Big\}\Big\}.$$

423. $(9a^2 - b^2)\Big\}(3a + b)\Big\}(3a + b) +$

$$3\sqrt[6]{(9a^2 - b^2)^3(3a - b)}\Big\} + (3a - b)\Big\{3(3a$$

$$+ b)\sqrt[3]{3a - b} + (3a - b)\sqrt{3a + b} + 3\sqrt[4]{9a^2 - b^2}$$

$$+ 6\sqrt[12]{(9a^2 - b^2)^7(3a + b)^2} + 3\sqrt{3a - b}\Big\} +$$

$$3(3a + b)\Big\{(3a + b)\sqrt[12]{(3a - b)^{11}(3a + b)^3} +$$

$$\sqrt[6]{(9a^2 - b^2)^3(3a - b)^2}\Big\} + \sqrt[4]{(9a^2 - b^2)^3}.$$

424. $8\Big\{a^2(a+b)\Big\{a\sqrt{a+b} + 3b\sqrt{a-b} + a\sqrt{a^2 - b^2}$

$$+ 2b(a - b) + ab(a - b)\sqrt{a+b} + b^2(a - b)\sqrt{a - b}\Big\}$$

$$+ ab^3(a - b)\sqrt{a^2 - b^2}\Big\} + b^2(a - b)\Big\{3a\sqrt{a+b} +$$

$$b\sqrt{a^2 - b^2}\Big\} + b\sqrt{a - b}\Big\}\Big\}.$$

425. $81ab\Big\{a^3\sqrt[3]{b} + b^3\sqrt{a} + 4\Big\{a^2b\sqrt[3]{a} + ab^2\sqrt{b}\Big\}$

$$+ 6ab\sqrt[3]{a^2b^2}\Big\}.$$

426. $81\left\{a^4\{a+b\}+b^4\{a-b\}+4ab\sqrt[4]{a^2-b^2}\left\{a^2\sqrt[4]{\{a+b\}^2}+b^2\sqrt[4]{\{a-b\}^2}\right\}+6a^2b^2\sqrt{a^2-b^2}\right\}$.

427. $\{x-a\}\left\{\{x-a\}+4\sqrt{x-a}\left\{\sqrt[3]{x+a}+\sqrt[4]{x^2-a^2}\right\}+6\left\{\sqrt[3]{\{x+a\}^2}+2\sqrt[12]{\{x+a\}^4\{x^2-a^2\}^3}+\sqrt{x^2-a^2}\right\}\right\}+4\sqrt{x-a}\left\{\{x+a\}+3\left\{\sqrt[12]{\{x-a\}^8\{x^2-a^2\}^3}+\sqrt[6]{\{x+a\}^2\{x^2-a^2\}^3}\right\}+\sqrt[4]{\{x^2-a^2\}^3}\right\}+\{x+a\}\left\{\sqrt{x+a}+\{x-a\}+4\sqrt[4]{x^2-a^2}\right\}+2\left\{3\sqrt[6]{\{x+a\}^4\{x^2-a^2\}^3}+2\sqrt[12]{\{x+a\}^4\{x^2-a^2\}^9}\right\}$.

428. $625a^8\{a^2+b^2\}\sqrt[3]{a^2+b^2}-1500a^6b^2\{a^2+b^2\}\sqrt[4]{a^2-b^2}+1350a^4b^4\sqrt{a^4-b^4}\sqrt[6]{a^2+b^2}-540a^2b^6\sqrt[3]{a^4-b^4}\sqrt[12]{\{a^2-b^2\}^5}+81b^8\{a^2-b^2\}+3500a^8b^2\{a^2+b^2\}\sqrt[5]{a^3-b^3}-6300a^6b^4\sqrt[4]{a^4-b^4}\sqrt[5]{a^3-b^3}\sqrt[12]{\{a^2+b^2\}^5}+3780a^4b^6\sqrt[3]{a^4-b^4}\sqrt[5]{a^3-b^3}\sqrt[6]{a^2-b^2}-756a^2b^8\sqrt[4]{\{a^2-b^2\}^3}\sqrt[5]{a^3-b^3}+7350a^8b^4\sqrt[3]{\{a^2+b^2\}^2}\sqrt[5]{\{a^3-b^3\}^2}-8820a^6b^6\sqrt[4]{a^4-b^4}\sqrt[5]{\{a^3-b^3\}^2}\sqrt[12]{a^2+b^2}+2646a^4b^8\sqrt{a^2-b^2}\sqrt[5]{\{a^3-b^3\}^2}+$

$$+\ 6860a^8b^6\sqrt[3]{a^2\ +\ b^2}\sqrt[5]{\{a^3\ -\ b^3\}^3}$$
$$-4116a^6b^8\sqrt[4]{a^2\ -\ b^2}\sqrt[5]{\{a^3\ -\ b^3\}^3}\ +$$
$$2401a^8b^8\sqrt[5]{\{a^3-b^3\}^4}.$$

429. $\{a+b\}^4\{a^3-b^3+2\{a-b\}\sqrt[5]{a^6-b^6}\}3\{a$
$-b\}\sqrt[10]{\{a^3-b^3\}^3}-2\sqrt[20]{\{a^3-b^3\}^{11}}\}-\{a$
$-b\}^3\{4\sqrt[4]{a^6-b^6}\sqrt[20]{\{a^3+b^3\}^7}-\{a-b\}\sqrt[5]{\{a^3+b^3\}^4}\}\}$
$+\ 4\{a\ +\ b\}^3\sqrt[6]{a^5\ -\ b^5}\}\sqrt[4]{\{a^3\ -\ b^3\}^3}$
$-\ \{a\ -\ b\}\{3\sqrt[5]{a^6\ -\ b^6}\sqrt[10]{\{a^3\ -\ b^3\}^3}-3\{a$
$-b\}\sqrt[4]{a^6-b^6}\sqrt[20]{\{a^3+b^3\}^3}+\{a-b\}^2\sqrt[5]{\{a^3+b^3\}^3}\}\}$
$+\ 6\{a\ +\ b\}^2\sqrt[3]{a^5\ -\ b^5}\}\sqrt{a^3\ -\ b^3}$
$-\{a-b\}\{2\sqrt[5]{a^6-b^6}\sqrt[20]{a^3-b^3}-\{a-b\}\sqrt[5]{\{a^3-b^3\}^2}\}\}$
$+4\{a+b\}\sqrt{a^3-b^3}\{\sqrt[4]{a^3-b^3}-\{a-b\}\sqrt[5]{a^3+b^3}\}$
$+\sqrt[3]{\{a^3-b^3\}^2}.$

430. $625a^6\{a^8\ +\ 4a^6\sqrt[6]{a}+6a^4\sqrt[3]{a}+4a^2\sqrt{a}+\sqrt[3]{a^2}\}$
$+500a^5\{2a+b\}\sqrt[3]{a^2-b^2}\{a^5\sqrt{a}+3a^3\sqrt[3]{a^2}+$
$3a\sqrt[6]{a^5}+1\}+150a^3\{2a+b\}^2\sqrt[3]{\{a^2-b^2\}^2}\{a^4+$
$2a^2\sqrt[6]{a}+\sqrt[3]{a}\}+20a\{2a+b\}^3\{a^2-b^2\}\{a^2\sqrt{a}+$
$\sqrt[3]{a^2}\}+\{2a+b\}^4\{a^2-b^2\}\sqrt[3]{a^2-b^2}+$
$4\{a+2b\}\sqrt[4]{a^2+b^2}\{125a^5\{a^5\sqrt{a}+3a^3\sqrt[3]{a^2}+$
$3a\sqrt[6]{a^5}+1\}+75a^3\{2a+b\}\sqrt[3]{a^2-b^2}\{a^4+2a^2\sqrt[6]{a}$

$$+\sqrt[3]{a}\}+15a\{2a+b\}^2\sqrt[3]{\{a^2-b^2\}^2}\{a^2\sqrt{a}+\sqrt[3]{a^2}\}$$
$$+\{2a+b\}^3\{a^2-b^2\}\}+6\{a+2b\}^2$$
$$\times\sqrt{a^2+b^2}\{25a^3\{a^4+2a^2\sqrt[6]{a}+\sqrt[3]{a}\}+10a^3\{2a$$
$$+b\}\sqrt[6]{a^3\{a^2-b^2\}^2}+10a\{2a+b\}\sqrt[3]{a^2\{a^2-b^2\}}+$$
$$\{2a+b\}^2\sqrt[3]{\{a^2-b^2\}^2}\}+4\{a+$$
$$2b\}^5\sqrt[4]{\{a^2+b^2\}^3}\{5a^3\sqrt{a}+5a\sqrt[3]{a^2}+\{2a$$
$$+b\}\sqrt[3]{a^2-b^2}\}+\{a+2b\}^4\{a^2+b^2\}.$$

EXPRESIONES IMAGINARIAS.

Suma.

431. $12+\{31\sqrt{2}+191\sqrt{3}\}\sqrt{-1}.$

432. $a\{16b+1\}+ab\{8a^3b^2\sqrt{2}+bc\{43c^2-9a\}$
$-2a\sqrt{7}\}\sqrt{-1}.$

433. $\{9a+5\}\sqrt{6}+a^2b\{16-3b+17b^4\}\sqrt{-1}.$

434. $b^2\{a^2\{4a^2+2a+3b\}-7b^3\}\sqrt{-1}.$

435. $3ab+ab\{5ab^2\sqrt{a}+3b^2\sqrt{ab}+7\sqrt[3]{a^2b}+3a\sqrt[3]{ab}$
$-7ab\sqrt[3]{ab^2}-3b^2\}\sqrt{-1}.$

436. $\left\{ a^2b \left\{ 3\sqrt[4]{a} + 11\sqrt[4]{a^3b^2} - 7b\sqrt[5]{a^3b^2} \right\} + a\left\{ b \left\{ 3\sqrt[5]{b^2} + 7\sqrt[4]{a^3} \right\} + 11\sqrt[5]{b^4} \right\} \right\} \sqrt{-1}.$

437. $3\{a+3b\} - \left\{ 133\sqrt{5} - 3856\sqrt[6]{3087} \right\} \sqrt{-1}.$

438. $\{33a + 39b + 5\}\sqrt[6]{32} + \{133a^2b^2 - 71\}\sqrt{21} - 5\sqrt{2} - 9\sqrt{6}.$

439. $5 + \left\{ 3\sqrt[6]{72} + 7a\sqrt[6]{108} - \{11 + 8a^2\}\sqrt{6} + 5\sqrt[10]{6075} + 8\sqrt{2} \right\} \sqrt{-1}.$

440. $\left\{ a\left\{ 10\sqrt[10]{12500} + \{a^2 + b^2\}\sqrt[10]{12500a^4} + a\left\{ \{6 - 3a^2b^2\}\sqrt[6]{8575} \right\} \right\} + \{3b^2 - 3a^2 - a^3 - a^2b\}\sqrt{2} \right\} \sqrt{-1}.$

Resta.

441. $-2 + \left\{ 201\sqrt{2} + 153\sqrt{7} \right\} \sqrt{-1}.$

442. $8 + \left\{ 165 + 15\sqrt{2} \right\} \sqrt{-1}.$

443. $\left\{ \sqrt[6]{108} - 14\sqrt[6]{72} + 9\sqrt[3]{50} \right\} \sqrt{-1}.$

444. $\left\{ 3\sqrt[2]{3} - 5{,}5\sqrt{2} + 1{,}7\sqrt{7} \right\} \sqrt{-1}.$

445. $\left\{ 2\{4a+3b\}\sqrt{2} + \{b - 3a\}\sqrt{3} \right\} \sqrt{-1}.$

446. $\left\{ab\left|ab+b^2-1,5a-\frac{b}{3}\right|+\frac{2}{3}a^3-0,5b^4\right\}\sqrt{-1}.$

447. $2a^2\left|0,4a^2+ab^2+b^2\right|\sqrt{-1}.$

448. $\left|2\left|3a\sqrt{2}+b\sqrt{3}\right|\right|\sqrt{-1}.$

Multiplicacion.

449. $195+145\sqrt{3}\ \sqrt{-1}.$

450. $2\left|2\left|5+9\sqrt{6}\right|+3\left|5\sqrt{3}-4\sqrt{2}\right|\sqrt{-1}\right|.$

451. $5\left|8\tfrac{1}{6}+175\sqrt{15}\right|+\left|218\tfrac{3}{4}\sqrt{5}-163\tfrac{1}{3}\sqrt{3}\right|\sqrt{-1}.$

452. $\left|27\tfrac{1}{12}+1152\sqrt{6}\right|+4\left|26\sqrt{2}-75\sqrt{3}\right|\sqrt{-1}.$

453. $6102\tfrac{9}{16}$ **454.** $208\tfrac{31}{36}.$

455. $207\tfrac{16}{25}+\tfrac{48}{5}\sqrt{3}\sqrt{-1}.$

456. $2\left\{1+9\sqrt[3]{5}\right\}.$

457. $4a\left|a+c^2\sqrt{a^2+b^2}\right|-b^2+\left\{2c\left|\sqrt{a^2+b^2}\right|2a-b\right|$
$-a\left|2a+b\right|\ \left|\right\}\sqrt{-1}.$

458. $9a^2-4b^2+c^2\left|a^2+b^2\right|-4bc\sqrt{a^2+b^2}\sqrt{-1}.$

459. $\left|a^2-b^2\right|^2\left|1+a^2\right|+a\left|a-b\right|^4-\left|a+b^4\right|\sqrt{-1}.$

460. $(a+b)^4+2a^2(a-b)^4$. **461.** $2a^2$.

462. $a^2-b^2+\sqrt{a^4-b^4}+\{(a^2+b^2)+\sqrt{a^4-b^4}\}\sqrt{-1}$.

463. $(a^2-b^2)+\sqrt{a^4-b^4}+\{(a-b)\sqrt{a^2-b^2}-(a+b)\sqrt{a^2+b^2}\}\sqrt{-1}$.

464. $a^4+a^2(1-2b^2)+b^2+b^4$.

Division.

465. $2+3\sqrt{-2}$. **466.** $\sqrt{2}+3\sqrt{3}$.

467. $2a+b\sqrt{-3}$.

468. $(3a-b)+(3a+b)\sqrt{-a^4b^2}$.

469. $2c^2-\sqrt{-b^4c^2}$.

470. $3a-5b-(5a+3b)\sqrt{-c^2}$.

471. $a+3b-(3a+b)\sqrt{-a^2}$.

472. $a^2(3a+2b)-b^2(3a-2b)\sqrt{-a^4}$.

473. $0{,}5+\sqrt{-2}$. **474.** $0{,}5-3\sqrt{-3}$.

475. $\frac{5}{4}\sqrt{2}-0{,}5\sqrt{-3}$. **476.** $\frac{5}{4}-3\sqrt{-2}$.

477. $\frac{5}{8} - \frac{2}{3}\sqrt{-3}$.

Potencias.

478. $-3\{1-4\sqrt{3}\sqrt{-1}\}$. **479.** $4\sqrt{-1}$.

480. $-5-2\sqrt{6}$.

481. $-2\{5+\sqrt{6}+\sqrt{10}+\sqrt{15}\}$.

482. $9a^2+12ab\sqrt{-1}-4b^2$.

483. $4a^4-12a^2b^3+9b^6-1+2\{2a^2-3b^3\}\sqrt{-1}$.

484. $2\{12ab+\{9a^2-4b^2\}\sqrt{-1}\}$.

485. $4\{5+17\sqrt{7}\sqrt{-1}\}$.

486. $4\{-3\sqrt{3}+\sqrt{5}\sqrt{-1}\}$.

487. $-8\{5\sqrt{7}+4\sqrt{11}\}\sqrt{-1}$.

488. $-\sqrt{-1}\{39\sqrt{3}+35\sqrt{5}+31\sqrt{7}+6\sqrt{105}\}$.

489. $2a^3\{4a^6-27b^4\}+9b^2\{4a^6-3b^4\}\sqrt{-1}$.

490. $3\{5a^4\{20a^4b^3+16b^6-1\}-4b^3\}+125a^{12}+64b^9$

$$+\{\,3\{a^4\{25a^4+40b^3\}+16b^6\}-1\}\sqrt{-1}.$$

491. $\{\,a-b-3\{a+b\}^2\}\sqrt{a-b}+\{\{a+b\}^3-3\{a^2-b^2\}\}\sqrt{-1}.$

492. $\{a-b\}^2-3\{a+b\}^2\sqrt[3]{\{a-b\}^2}+\{3\{a^2-b^2\}\sqrt[3]{a-b}-\{a+b\}^3\}\sqrt{-1}.$

493. $8\{401+333\sqrt{7}\sqrt{-1}\}.$ **494.** $-16.$

495. $-\{23+4\sqrt{6}\sqrt{-1}\}.$

496. $49+20\sqrt{6}.$

497. $87300+40608\sqrt{2}+38880\sqrt{3}+16272\sqrt{6}.$

498. $9a^2\{9a^2-294b^2\}+2401b^4+84ab\{9a^2-49b^2\}\sqrt{-1}.$

499. $\{81a^8-540a^6b+1350a^4b^2-1500a^2b^3+625b^4\}$
$\{3a^2\}27a^6-4a^4\{45b+2\}+6ab^2\{75a+4\}$
$-500b^3\}+571b^4\}+8a^3\{2a^9-12a^6b^2+27a^3b^4$
$-27b^6\}+81b^8+\{4a^2\{18a^5-60a^3b-27a^2b^2+$
$200ab^2+90b^3\}-300b^4\}\{81a^8-4a^6\{135b+1\}$
$+6b^2\{225a^4-2a^3\}-1500a^2b^3+616b^4\}\sqrt{-1}.$

500. $\{3a^2-b\}\sqrt[3]{3a^2-b}-6\{a^2+b^2\}\sqrt[3]{\{3a^2-b\}^2}+\{a^2+b^2\}^2+4\{a^2+b^2\}\sqrt[6]{\{3a^2-b\}^2\{a^2+b^2\}^3}-\{3a^2-b\}\sqrt{a^2+b^2}\sqrt{-1}$.

Módulos.

501. 13. **502.** 25. **503.** 37. **504.** 17.

505. $\frac{28}{29}$. **506.** $a+b$. **507.** $a+b$.

508. a^3b+ab^3. **509.** $a^2b^4+x^2y^4$.

510. $3a+2b+c$. **511.** 529. **512.** 30.

513. 30. **514.** $\frac{1482}{5791}$. **515.** 5291.

516. $4\{a+b\}$.

517. $3a^5+5a^3b^3+12a^2b^5+20b^6$.

518. $ax\{91a^6+39a^4b^2+84a^2x^4+36b^2x^4\}$.

519. $3x^4+8x^3y+12x^2y^2+12xy^3+5y^4$.

520. $77x^8+96x^7+27x^6+111x^4+69x^3+40$.

521. $\sqrt{6}$. **522.** $\sqrt{5}$.

523. $\sqrt{28}$. **524.** 3.

525. $\sqrt{a\{9a+1\}}$. **526.** $\sqrt{\{a-b\}^4+\{a+b\}^2}$.

527. $a-b$. **528.** $a+b$.

Trasformacion de expresiones de la forma $\sqrt{A \pm \sqrt{B}}$.

529. $2+2\sqrt{2}$. **530.** $\sqrt{14}+3$.

531. $6\sqrt{10}+\sqrt{57}$.

532. $2\sqrt{65}+4\sqrt{15}$. **533.** $7+\sqrt{885}$.

534. $\sqrt{\frac{1221}{2}}+3\sqrt{\frac{15}{2}}$. **535.** $\sqrt{\frac{157}{2}}+\sqrt{\frac{107}{2}}$.

536. $\sqrt{\frac{1691}{2}}+\sqrt{\frac{23}{2}}$. **537.** $\sqrt{\frac{1453}{2}}+\sqrt{\frac{163}{2}}$.

538. $\sqrt{\frac{2221}{2}}+\sqrt{\frac{247}{2}}$.

539. $\sqrt{\frac{a^2(3b+4)+b^2(3a+4)}{2}}+\sqrt{\frac{a^2(3b-1)+b^2(3a-1)}{2}}$.

540. $\sqrt{\frac{a^2(b-3abc^2)+b^2(3ac^3-c)}{2}}+\sqrt{\frac{-a^2(3abc^2+b)+b^2(3ac^3+c)}{2}}$.

541. $\sqrt{ab\{5a+4b\}+\frac{5}{2}bc}+\sqrt{\frac{3}{2}bc}$.

542. $\sqrt{\frac{a^2(3b+1)+b^2(2c+3c+1)+c^2}{2}}+\sqrt{\frac{a^2(3b-1)+b^2(2a+3c-1)-c^2}{2}}$.

543. $\sqrt{abc\{2b\{a^2-bc\}+3ac^2\}}+bc\sqrt{-2ab}$.

544. $\sqrt{ab\{3a-b\}-\frac{b^3}{2}}-b\sqrt{a+\frac{b}{2}}$.

545. $\sqrt{abc\{5a^2b-b^2c-\frac{3}{2}ac^2\}}+c\sqrt{ab\{b^2+\frac{3}{2}ac\}}$.

546. $\sqrt{b\left\{\frac{a(a+0,6b-2,3)-3,2b}{2}\right\}}+\sqrt{b\left\{\frac{2,3a+3,2b}{2}\right\}}$.

547. $\sqrt{\frac{2}{3}a^3+\frac{5ab-3b^3}{2}}-\sqrt{-\frac{5ab}{2}}$.

548. $ab\{\sqrt{2,6b-2\frac{1}{6}a}+\sqrt{2\frac{5}{6}a-1,4b}\}$.

Quitar la forma irracional, ó la imaginaria, al denominador de una fraccion.

549. $6+2\sqrt{2}-3\sqrt{3}-\sqrt{6}$.

550. $\frac{\{5+\sqrt{6}\}\{1+\sqrt{5}+\sqrt{6}\}\sqrt{5}}{-10}$.

551. $\frac{9a^2-1-(3a+2)\sqrt{-5}}{9a^2-12a+9}$.

552. $-\sqrt{-1}$.

553. $\frac{3a^2-1+2a\sqrt{-3}}{3a^2+1}$.

554. $\frac{a^3-a^2\sqrt{a^2-b}}{b}$.

555. $\frac{2a\{a+\sqrt{a^2-b}\}-b}{b}$.

556. $\frac{a+b-\sqrt{a^2-b^2}}{2b}$.

557. $\frac{a+b+\sqrt{a^2-b^2}}{2b}$.

558. $\dfrac{\{2\sqrt{a}+3\sqrt{b}+4\sqrt{c}\}\ \{12a^2+27ab-48ac-36a\sqrt{ab}\}}{16a^2-72ab+81b^2+256c^2-128ac-288bc}$.

559. $\dfrac{\{\sqrt{a}+\sqrt{2(a-b)}+3\sqrt{a^2-b}\}\ (a+b)\ \{3a+7b-9a^2-2\sqrt{2a(a-b)}\}}{81a^4-54a^3+a^2-126a^2b+50ab+49b^2}$

560. $\dfrac{\{\sqrt{a^2+b}+\sqrt{a^2-b}+\sqrt{2ab}\}\ \{2a(a-b)-2\sqrt{a^4-b^2}\}(3a+2b)}{4b(a^2b-2a^3+b)}$.

561. $\dfrac{2+\sqrt{2(a^2+b^2)}-\{\sqrt{2(a^2+b^2)}+a^2+b^2\}\sqrt{-1}}{a^2+b^2+2}$.

OPERACIONES CON LAS CANTIDADES QUE TIENEN EXPONENTES NEGATIVOS.

Suma.

562. $a\{b^4+b^3+b^2\}+b^5+b^4+b^3+a^{-1}\{b^6+b^5+b^4\}+a^{-2}\{b^6+b^5\}$.

563. $31\times9^{-1}\{a^{-2}b^3c^4+a^2b^{-3}c^4+a^2b^3c^{-4}\}$.

564. $11\times2^{-2}ab^2c^{-3}+31\times3^{-2}ab^{-2}c^3+131\times5^{-2}a^{-1}b^2c^3$.

565. $2^{-1}\times3^{-2}\times5^{-3}a^{-7}b^{-4}c^{-2}\{4500b^8c^3+6750a^2b^7c^4+11250a^4b^6c^3+1125a^{14}c^5+250a^{12}b^7+18a^4b^2c^3\}$.

566. $ab^3c^3\{3+5a^2b^2c^2\}+3^{-2}\times5^{-2}a^{-3}b^{-3}c^{-7}\{3^2+5^2a^2b^2c^2\}$.

567. $\{acd\}^{-4}b^{-2}\{a^3cd^8+a^6bd^7+ab^4c^3+b^3c^3d^8\}$.

568. $\frac{a^2c^6d^8+a^8b^8+a^3b^6d^7+b^4c^4}{a^4b^3c^2d^3}$.

569. $2^{-1}\times3^{-1}\times5^{-2}a^{-2}b^{-3}c^{-5}\{10a^4b^6+2a^5bc^9+25b^5c^8-15a^4c^9\}$.

Resta.

570. $2^{-5}\times3^{-2}a^{-2}b^{-3}\{9b^4\{24+b^2\}+2a\{9a^2-4b^4\}\}$.

571. $\{3ab\}^{-2}\{9b^2\{b^3+3a^4\}-a^2\{a^3b^2+72\}\}$.

572. $2^{-2}\times5^{-2}a^{-4}\{3a\{1+a^2\}-2\{a^2+125\}\}$.

573. $2^{-5}\times3^{-2}\times5^{-2}a^{-3}\{25a^5\{9+8a\}-9\{100+a\}\}$.

574. $2^{-2}\times3^{-2}\times5^{-2}a^{-5}b^{-5}\{73a^5-270b^5\{ab-10\}\}$.

575. $2^{-5}\times3^{-1}\times a^{-7}b^{-3}x^{-2}y^{-5}\{2^4\{3x^4y\{3a^5b^6x^5-y^6\}+4a^{11}by^8\}+a^{10}b^5x^2\}$.

576. $2^{-5}\times5^{-2}a^{-8}b^{-7}\{2a^{11}b^5\{50+3a^2b^6\}-5\{5a^{10}+28b^{12}\}\}$.

577. $3^{-2}\times5^{-1}\times a^{-7}b^{-5}x^{-8}y^{-3}\{5y^5\{27b^5x^{16}-a^{14}b^5+2025a^{10}xy^3\}-a^4b^{10}x^{13}\}$.

Multiplicacion.

578. $9a^{-3}b^7c^8+15a^8b^{-3}c^7+27a^{13}b^5c^{-1}$.

579. $90a^6 - 20c^2 - 36b^4$.

580. $5bc^2 + 7ab^2 - 8a^2c$.

581. $\frac{9}{4}a^5b^5c^{-2} - 2a^5bc^4 - \frac{2}{5}ab^5c^{-2}$.

582. $5^{-3}abc^{-2} - 15^{-2}a^2b^{-1}c^{-1} - 135^{-1}$.

583. $288b^{-5n}c^{-4p} - 324a^{-2m}b^n c^{-4p} - 648a^{2m}b^{-2n}$.

584. $x + 2a^{-1} + 3a^{-2}x^{-1} + a^{-3}x^{-2} + a^{-3}x^3 + 2a^{-4}x^2 + 3a^{-5}x + a^{-6}$.

585. $a^5x^{-5} - 2a^4x^{-4} + 2a^5x^{-5} - a^6x^{-6}$.

586. $6a^{11}x^{-5} - 13a^{12}x^{-4} + 36a^{13}x^{-5} - 30a^{14}x^{-6} + 36a^{15}x^{-7}$.

587. $3\times2^{-2}a^{12}x^{-9} - 17\times2^{-4}a^{11}x^{-8} + 109\times2^{-1}\times3^{-1}a^{10}x^{-7} - 29\times2^{-1}\times3^{-2}a^9x^{-6} + 2a^8x^{-5}$.

588. $6^{-2}\times2^{-3}a^7 - 175\times2^{-8}\times3^{-4}a^8x^{-1} - 209\times2^{-5}\times3^{-2}\times5^{-2}a^9x^{-2} - 61\times2^{-6}\times3^{-2}\times5^{-2}a^{10}x^{-3} + 5^{-2}\times2^{-3}a^{11}x^{-4}$.

589. $1 - 2ax + 2a^2x^2 - a^3x^3 + x^2 - ax^3 + a^2x^4$.

Division.

590. $a^6 - a^5x + a^4x^2$. **591.** $a^{-5}x^2 - a^{-4}x + a^{-3}$.

592. $2a^{-7} - 3a^{-6}x + 5a^{-5}x^{-3}$.

593. $3^{-2}a^{-5}x^{-5} - 2^{-2}a^{-4}x^{-6} + 5^{-1}a^{-2}x^{-7} - 2^{-1}a^{-1}x^{-8}$.

594. $3^{-1}a^{-2}x^{-3} - 2^{-1}a^{-3}x^{-2} + 3^{-2}a^{-1}x^{-4} - 2^{-2}a^{-4}x^{-1}$.

595. $2a^{-1}x^{-2} - 3a^{-2}x^{-1} + 5a^{-3}x^{-3}$.

596. $2^{-3}a^{-7}x^{-3} - 3^{-2}a^{-3}x^{-7}$.

597. $2a^{-5}x^{5} - 3^{-2}a^{3}x^{-5}$.

598. $2^{3}a^{2}x^{3} - 3^{2}a^{3}x^{2} + 2a^{4}x$.

599. $5^{-2}a^{-4}x^{-2} - 3^{-1}a^{-3}x^{-3} + 2^{-3}a^{-2}x^{-4}$.

Elevacion á potencias positivas de cantidades con exponentes negativos.

600. $a^{-14}\ b^{-10}\ x^{-6} + c^{-4}\ d^{-8}\ z^{-12} + 2a^{-7}b^{-5}c^{-2}d^{-4}x^{-3}z^{-6}$.

601. $3^{-2}a^{-4}c^{-6} + 5^{-4}a^{-6}b^{-2}c^{-4} + 2 \times 3^{-1} \times 5^{-2}a^{-5}b^{-1}c^{-5}$.

602. $4^{-1}a^{-4}b^{-6} + 81^{-1}a^{-14}c^{-10} + 9^{-1}a^{-9}b^{-3}c^{-5}$.

603. $4^{-1}a^{6}b^{4}x^{2} + a^{-6}b^{-4}x^{-2} - 1$.

604. $2^{-6}a^{-4}b^{6}x^{-2} + 4^{-4}a^{4}b^{-2}x^{6} - 2^{-6}b^{2}x^{2}$.

605. $\dfrac{a^{-6}\ x^{-4}}{b^{-8}\ c^{-2}} + \dfrac{a^{-4}\ d^{-6}}{b^{-2}\ x^{-14}} - \dfrac{a^{-5}\ d^{-3}}{2^{-1}\ b^{-5}\ c^{-1}\ x^{-8}}$.

606. $\dfrac{4^{-1}\ a^{4}}{b^{-6}\ c^{-8}} + \dfrac{b^{-4}}{4^{-1}\ a^{-8}\ c^{-10}\ x^{-14}} + \dfrac{2}{a^{-4}\ b^{-1}\ c^{-9}\ x^{-7}}$.

607. $\frac{a^{-16}x^{-4}}{b^{-10}y^{-8}} + \frac{4^{-1}c^{-8}y^{-6}}{d^{-2}x^{-4}} + \frac{36^{-2}a^{-10}z^{-14}}{x^{-8}y^{-6}} + \frac{a^{-8}c^{-4}}{b^{-8}d^{-1}y^{-1}}$
$+ \frac{2^{-1}\times 3^{-2}a^{-13}z^{-7}}{b^{-5}x^{-2}y^{-7}} + \frac{6^{-2}a^{-3}c^{-4}z^{-7}}{d^{-1}x^{-6}}.$

608. $a^{-24}b^{-21} + a^{-21}b^{-14}c^{-3} + 3^{-1}a^{-18}b^{-7}c^{-6} +$
$3^{-3}a^{-15}c^{-9}.$

609. $8a^9b^{12} + 4 \times 3^{-1}a^3b^6 + 2 \times 3^{-3}a^{-3} +$
$27^{-2}a^{-9}b^{-6}.$

610. $27a^{-6}x^{12} - 9a^{-2}x^4 + a^2x^{-4} - 27^{-1}a^6x^{-12}.$

611. $19683a^{-36}x^{-33} + 243a^{-26}x^{-25} + a^{-16}x^{-17} +$
$3^{-6}a^{-6}x^{-9}.$

612. $216a^{-21}x^{-27} + 65 \times 8^{-2}a^{-24}x^{-24} +$
$27^{-2}a^{-27}x^{-21} + 27a^{-22}x^{-26} + 105 \times 2^{-3}a^{-23}x^{-25}$
$+ 35 \times 2^{-4} \times 3^{-2}a^{-25}x^{-23} + 2^{-2} \times 3^{-3}a^{-26}x^{-22}.$

613. $46656a^{60}x^{57} + 1944a^{38}x^{37} + 432a^{37}x^{36} +$
$27a^{16}x^{17} + 12a^{15}x^{16} + 2^2 \times 3^{-1}a^{14}x^{15} +$
$2^{-3}a^{-6}x^{-3} + 3^{-1} \times 2^{-2}a^{-7}x^{-4} + 54^{-1}a^{-8}x^{-5}$
$+ 27^{-2}a^{-9}x^{-6}.$

614. $\frac{a^{21}x^{-9}}{2^{-3}b^{15}y^{-12}} - \frac{a^{12}x^{-4}}{2^{-2}b^{9}y^{-11}} + \frac{3^{-1}a^{3}}{2^{-1}b^{3}x^{-1}y^{-10}} - \frac{27^{-1}a^{-6}b^{3}}{x^{-6}y^{-9}}.$

615. $\frac{\left(a^{18}\{(a-b)(ab+1)\}^6 + 3a^{32}b^9\{(a-b)(ab+1)\}^4(ab-1)^6 + 3a^{16}b^{18}\{(a-b)(ab+1)\}^2(ab-1)^{12} + b^{27}(ab-1)^{18}\right)}{a^9b^{36}(ab-1)^9(a-b)^6}.$

616. $a^{-12}b^{-8} + 4a^{-9}b^{-6}x^{-1}y^{-4} + 6a^{-6}b^{-4}x^{-2}y^{-8}$
$+ 4a^{-3}b^{-2}x^{-3}y^{-12} + x^{-4}y^{-16}.$

617. $a^{-12}x^{-8} - 4a^{-10}x^{-6}y^{-4} + 6a^{-8}x^{-4}y^{-8} - 4a^{-6}x^{-2}y^{-12} + a^{-4}y^{-16}$.

618. $a^{-12}x^{8} + 4a^{-7}x^{5} + 6a^{-2}x^{-2} + 4a^{3}x^{-7} + a^{8}x^{-12}$.

619. $6 - 4a^{14}x^{-8} + a^{28}x^{-16} - 4a^{-14}x^{8} + a^{-28}x^{16}$.

620. $81a^{28}x^{-28} - 216a^{14}x^{-14} + 16a^{-28}x^{28} - 96a^{-14}x^{14} + 216$.

621. $81a^{8}x^{12} + 12a^{4}b^{-3}x^{9} + 2 \times 3^{-1}b^{-6}x^{6} + 4 \times 243^{-1}a^{-4}b^{-9}x^{3} + 6561^{-1}a^{-8}b^{-12}$.

622. $4096\,a^{-8}\,b^{12} - 512a^{-5}b^{9}x^{-2} + 24a^{2}b^{6}x^{-4} - 2^{-1}a^{7}b^{3}x^{-6} + 256^{-1}a^{12}x^{-8}$.

623. $10^{-4}b^{12}x^{-8} - 2 \times 5^{-3}b^{4}x^{-6}y^{6} + 24 \times 5^{-2}b^{-4}x^{-4}y^{12} - 2^{7} \times 5^{-1}b^{-12}x^{-2}y^{18} + 256b^{-20}y^{24}$.

Potencias negativas de cantidades afectadas con exponentes positivos.

624. $a^{-5}x^{-2} - a^{-6}b^{2}x^{-4}y^{3} + a^{-9}b^{4}x^{-6}y^{6} - a^{-12}b^{6}x^{-8}y^{9} + a^{-15}b^{8}x^{-10}y^{12} - a^{-18}b^{10}x^{-12}y^{15} + \ldots\ldots$.

625. $a^{-4}x^{-2} - a^{-5}x^{-1} + a^{-6} - a^{-7}x + a^{-8}x^{2} - a^{-9}x^{3} + a^{-10}x^{4} - \ldots\ldots$

626. $a^{-7}x^{-2} + a^{-12}x^{-4}y^{7} + a^{-17}x^{-6}y^{14} + a^{-22}x^{-8}y^{21} + a^{-27}x^{-10}y^{28} + a^{-32}x^{-12}y^{35} + a^{-37}x^{-14}y^{42} + \ldots$

627. $a^{-2}x^{-3} - 5a^{-4}b^{3}x^{-6}y^{2} + 25a^{-6}b^{6}x^{-9}y^{4} - 125a^{-8}b^{9}x^{-12}y^{6} + 625a^{-10}b^{12}x^{-15}y^{8} - 3125a^{-12}b^{15}x^{-18}y^{10} + 15625a^{-14}b^{18}x^{-21}y^{12} - \ldots\ldots$

628. $\frac{1}{2}a^{-5}y^{-2} + \frac{5}{4}a^{-6}b^{2}x^{3}y^{-4} + \frac{9}{8}a^{-9}b^{4}x^{6}y^{-6} +$
$\frac{27}{16}a^{-12}b^{6}x^{9}y^{-8} + \frac{81}{32}a^{-15}b^{8}x^{12}y^{-10} +$
$\frac{243}{64}a^{-18}b^{10}x^{15}y^{-12} + \ldots\ldots$

629. $\frac{1}{4}a^{-5}x^{-3} - \frac{3}{8}a^{-8} + \frac{9}{16}a^{-11}x^{3} - \frac{27}{32}a^{-14}x^{6} +$
$\frac{81}{64}a^{-17}x^{9} - \frac{243}{128}a^{-20}x^{12} + \ldots\ldots$

630. $x^{-2} - 2ax^{-3} + 3a^{2}x^{-4} - 4a^{3}x^{-5} + 5a^{4}x^{-6}$
$-6a^{5}x^{-7} + \ldots\ldots$

631. $x^{-2} + 2ax^{-3} + 3a^{2}x^{-4} + 4a^{3}x^{-5} + 5a^{4}x^{-6} +$
$6a^{5}x^{-7} + \ldots\ldots$

632. $a^{-6}x^{-4} - 2a^{-9}b^{2}x^{-6}y^{3} + 3a^{-12}b^{4}x^{-8}y^{6}$
$- 4a^{-15}b^{6}x^{-10}y^{9} + 5a^{-18}b^{8}x^{-12}y^{12}$
$- 6a^{-21}b^{10}x^{-14}y^{15} + 7a^{-24}b^{12}x^{-16}y^{18}$
$-8a^{-27}b^{14}x^{-18}y^{21} + \ldots\ldots$

633. $a^{-2}b^{-4} - 2a^{-5}b^{-6}x^{3}y^{4} + 3a^{-4}b^{-8}x^{6}y^{8}$
$- 4a^{-5}b^{-10}x^{9}y^{12} + 5a^{-6}b^{-12}x^{12}y^{16}$
$- 6a^{-7}b^{-14}x^{15}y^{20} + 7a^{-8}b^{-16}x^{18}y^{24}$
$-8a^{-9}b^{-18}x^{21}y^{28} + \ldots\ldots$

634. $a^{-14}b^{-6} - 6a^{-21}b^{-9}x^{6}y^{4} + 27a^{-28}b^{-12}x^{12}y^{8}$
$- 108a^{-35}b^{-15}x^{18}y^{12} + 405a^{-42}b^{-18}x^{24}y^{16}$
$- 1458a^{-49}b^{-21}x^{30}y^{20} + 5103a^{-56}b^{-24}x^{36}y^{24}$
$-17496a^{-63}b^{-27}x^{42}y^{28} + \ldots\ldots$

635. $\frac{1}{9}a^{-18}x^{-10} - \frac{2}{27}a^{-27}b^{6}x^{-15}y^{8} + \frac{1}{27}a^{-36}b^{12}x^{-20}y^{16}$
$- \frac{4}{243}a^{-45}b^{18}x^{-25}y^{24} + \frac{5}{729}a^{-54}b^{24}x^{-30}y^{32}$
$- \frac{2}{729}a^{-63}b^{30}x^{-35}y^{40} + \frac{7}{6561}a^{-72}b^{36}x^{-40}y^{48}$
$- \frac{8}{19683}a^{-81}b^{42}x^{-45}y^{56} + \ldots\ldots$

636. $\frac{1}{4}a^{-22}x^{-20} - \frac{3}{4}a^{-26}x^{-30}y^{8} + \frac{27}{16}a^{-30}x^{-40}y^{16}$
$- \frac{27}{8}a^{-34}x^{-50}y^{24} + \frac{405}{64}a^{-38}x^{-60}y^{32}$
$- \frac{729}{64}a^{-42}x^{-70}y^{40} + \frac{5103}{256}a^{-46}x^{-80}y^{48}$
$- \frac{2187}{64}a^{-50}x^{-90}y^{56} + \ldots\ldots$

637. $\frac{1}{4}a^{-14}x^{-2} + \frac{5}{4}a^{-19}x^{2} + \frac{75}{16}a^{-24}x^{6} + \frac{125}{8}a^{-29}x^{10}$
$+ \frac{3125}{64}a^{-34}x^{14} + \frac{9375}{64}a^{-39}x^{18} + \frac{109375}{256}a^{-44}x^{22}$
$+ \frac{78125}{64}a^{-49}x^{26} + \ldots\ldots$

638. $\frac{1}{9a^{10}x^{8}} + \frac{2}{27a^{15}x^{12}} + \frac{1}{27a^{20}x^{16}} + \frac{4}{243a^{25}x^{20}} + \frac{5}{729a^{30}x^{24}} +$
$\frac{2}{729a^{35}x^{28}} + \frac{7}{6561a^{40}x^{32}} + \frac{8}{19683a^{45}x^{36}} + \ldots\ldots$

639. $\frac{1}{49a^{2}x^{6}} + \frac{12}{49a^{3}x^{9}} + \frac{108}{49a^{4}x^{12}} + \frac{864}{49a^{5}x^{15}} + \frac{6480}{49a^{6}x^{18}} +$
$\frac{46656}{49a^{7}x^{21}} + \frac{46656}{7a^{8}x^{24}} + \frac{2239488}{49a^{9}x^{27}} + \ldots\ldots$

640. $x^{-5} - 3ax^{-4} + 6a^{2}x^{-5} - 10a^{3}x^{-6} + 15a^{4}x^{-7}$
$- 21a^{5}x^{-8} + 28a^{6}x^{-9} - 36a^{7}x^{-10} + \ldots\ldots$

641. $x^{-5} + 3ax^{-4} + 6a^{2}x^{-5} + 10a^{3}x^{-6} + 15a^{4}x^{-7}$
$+ 21a^{5}x^{-8} + 28a^{6}x^{-9} + 36a^{7}x^{-10} + \ldots\ldots$

642. $a^{-6}x^{-9} - 3a^{-8}b^{4}x^{-12}y^{5} + 6a^{-10}b^{8}x^{-15}y^{10}$
$- 10a^{-12}b^{12}x^{-18}y^{15} + 15a^{-14}b^{16}x^{-21}y^{20}$
$- 21a^{-16}b^{20}x^{-24}y^{25} + 28a^{-18}b^{24}x^{-27}y^{30}$
$- 36a^{-20}b^{28}x^{-30}y^{35} + \ldots\ldots$

643. $a^{-6}x^{-9} + 3a^{-5}x^{-10} + 6a^{-4}x^{-11} + 10a^{-3}x^{-12}$
$+ 15a^{-2}x^{-13} + 21a^{-1}x^{-14} + 28x^{-15} +$
$36ax^{-16} + \ldots\ldots$

644. $\frac{1}{27a^6x^3} - \frac{1}{27a^7x} + \frac{2x}{81a^8} - \frac{10x^3}{729a^9} + \frac{5x^5}{729a^{10}} - \frac{7x^7}{2187a^{11}} + \frac{28x^9}{19683a^{12}} - \frac{4x^{11}}{6561a^{13}} + \ldots\ldots$

645. $\frac{1}{a^3x^{15}} + \frac{9a}{x^{19}} + \frac{54a^3}{x^{23}} + \frac{270a^5}{x^{27}} + \frac{1215a^{13}}{x^{31}} + \frac{5103a^{17}}{x^{35}} + \frac{20412a^{21}}{x^{39}} + \frac{78732a^{25}}{x^{43}} + \ldots\ldots$

646. $\frac{1}{8x^9y^{12}} - \frac{21}{16x^8y^{13}} + \frac{294}{32x^7y^{14}} - \frac{3430}{64x^6y^{15}} + \frac{36015}{128x^5y^{16}} - \frac{352947}{256x^4y^{17}} + \frac{3294172}{512x^3y^{18}} - \frac{29647548}{1024x^2y^{19}} + \ldots\ldots$

647. $a^{-21}x^{-9} - 1{,}5a^{-28}x^{-7}y^6 + 1{,}5a^{-35}x^{-5}y^{12} - 1{,}25a^{-42}x^{-3}y^{18} + 0{,}9375a^{-49}x^{-1}y^{24} - 0{,}65625a^{-56}xy^{30} + 0{,}4375a^{-63}x^3y^{36} - 0{,}28125a^{-70}x^5y^{42} + \ldots\ldots$

648. $\frac{1}{8x^9y^{12}} + \frac{9z^6}{80x^{12}y^{11}} + \frac{27z^{12}}{400x^{15}y^{10}} + \frac{27z^{18}}{800x^{18}y^9} + \frac{243z^{24}}{16000x^{21}y^8} + \frac{5103z^{30}}{800000x^{24}y^7} + \frac{5103z^{36}}{2000000x^{27}y^6} + \frac{19683z^{42}}{20000000x^{30}y^5} + \ldots\ldots$

649. $\frac{1000}{8x^9y^{15}} + \frac{1125}{2x^7y^{17}} + \frac{3375}{2x^5y^{19}} + \frac{16875}{4x^3y^{21}} + \frac{151875}{16xy^{23}} + \frac{637875x}{32y^{25}} + \frac{900375x^3}{16y^{27}} + \frac{5472875x^5}{32y^{29}} + \ldots\ldots$

650. $x^{-4} - 4ax^{-5} + 10a^2x^{-6} - 20a^3x^{-7} + 35a^4x^{-8} - 56a^5x^{-9} + 84a^6x^{-10} - 120a^7x^{-11} + \ldots\ldots$

651. $\frac{1}{625a^{12}x^8} - \frac{28b^2y^3}{3125a^{15}x^{10}} + \frac{98b^4y^6}{3125a^{18}x^{12}} - \frac{1372b^6y^9}{15625a^{21}x^{14}} + \frac{16807b^8y^{12}}{78125a^{24}x^{16}} - \frac{941192b^{10}y^{15}}{1953125a^{27}x^{18}} + \frac{98825316b^{12}y^{18}}{9765625a^{30}x^{20}} - \frac{19763052b^{14}y^{21}}{9765625a^{33}x^{22}} + \ldots\ldots$

652. $\frac{1}{625a^{12}x^8} + \frac{28}{3125a^{13}x^7} + \frac{98}{3125a^{14}x^6} + \frac{1372}{15625a^{15}x^5} + \frac{16807}{78125a^{16}x^4} + \frac{941192}{1953125a^{17}x^3} + \frac{98825316}{9765625a^{18}x^2} + \frac{19763052}{9765625a^{19}x} + \ldots\ldots$

653. $\frac{1}{2401a^8x^{12}} + \frac{20}{16807a^7x^{13}} + \frac{250}{117649a^6x^{14}} + \frac{2500}{823543a^5x^{15}} + \frac{3125}{823543a^4x^{16}} + \frac{25000}{5764801a^3x^{17}} + \frac{187500}{40353607a^2x^{18}} + \frac{9375000}{1977326745ax^{19}} + \cdots\cdots$

654. $\frac{1}{256a^{20}b^{24}}\left\{1 + \frac{3x^6y^5}{a^5b^6}\right\}\left\{1 + \frac{15x^6y^5}{8a^5b^6} + \frac{45x^{12}y^{10}}{16a^{10}b^{12}} + \frac{945x^{18}y^{15}}{256a^{15}b^{18}}\right\} + \frac{245x^{30}y^{25}}{32768a^{45}b^{54}}\left\{7 + \frac{63x^6y^5}{8a^5b^6} + \frac{135x^{12}y^{10}}{16a^{10}b^{12}}\right\} + \cdots\cdots$

655. $\frac{10^4}{a^8x^{28}} - \frac{4\times10^6}{a^3x^{33}} + \frac{10^9a^2}{x^{38}} - \frac{2\times10^{11}a^7}{x^{43}} + \frac{35\times10^{12}a^{12}}{x^{48}} - \frac{56\times10^{14}a^{17}}{x^{53}} + \frac{84\times10^{16}a^{22}}{x^{58}} - \frac{12\times10^{19}a^{27}}{x^{63}} + \cdots\cdots$

656. $\frac{1}{10^4a^{28}x^8} + \frac{1}{25\times10^4a^{33}x^3} + \frac{x^2}{10^7a^{38}} + \frac{x^7}{5\times10^8a^{43}} + \frac{7x^{12}}{2\times10^{11}a^{48}} + \frac{7x^{17}}{125\times10^{11}a^{53}} + \frac{21x^{22}}{25\times10^{14}a^{58}} + \frac{5x^{27}}{25\times10^{15}a^{63}} + \cdots\cdots$

657. $\frac{81}{16a^4x^4} + \frac{729}{16a^3x^3} + \frac{32805}{128a^2x^2} + \frac{295245}{256ax} + \frac{18600435}{4096} + \frac{33480783ax}{2048} + \frac{905981141a^2x^2}{16384} + \frac{58113073335a^3x^3}{32768} + \cdots\cdots$

658. $\frac{1}{81a^2} + \frac{8}{243a^2}\sqrt[6]{a} + \frac{40}{729a^2}\sqrt[3]{a} + \frac{160}{2187a\sqrt{a}} + \frac{560}{6561a^2}\sqrt[3]{a^2} + \frac{1792}{19683a}\sqrt[6]{\frac{1}{a}} + \frac{5376}{59049a} + \cdots\cdots$

659. $\frac{1}{625(a^3+b^3)} - \frac{28}{3125(a^3+b^3)}\sqrt[12]{\frac{(a^2-b^2)^4}{(a^3+b^3)^3}} + \frac{490}{15625(a^3+b^3)}\sqrt[6]{\frac{(a^2-b^2)^4}{(a^3+b^3)^3}} - \frac{6860(a^2-b^2)}{78125(a^3+b^3)\sqrt{(a^3+b^3)^3}} + \frac{84035(a^2-b^2)}{390625(a^3+b^3)^2}\sqrt[3]{a^2-b^2}$

$$-\frac{941192\,(a^2-b^2)}{1953125\,(a^3+b^3)^2}\sqrt[12]{\frac{(a^2-b^2)^8}{(a^3+b^3)^3}}+\frac{9882516\,(a^2-b^2)^2}{9765625\,(a^3+b^3)^2\sqrt{a^3+b^3}}$$

$$-\cdots\cdots$$

660. $$\frac{a^3}{2b^3}-\frac{3a^9}{4b^8}+\frac{9a^{15}}{8b^{13}}-\frac{27a^{21}}{16b^{18}}+\frac{81a^{27}}{32b^{23}}-\frac{243a^{33}}{64b^{28}}+\frac{729a^{39}}{128b^{33}}-\frac{2187a^{45}}{256b^{38}}+\cdots\cdots$$

661. $$\frac{9b^3}{a^3}-\frac{162b^8}{a^9}+\frac{2916b^{13}}{a^{15}}-\frac{52488b^{18}}{a^{21}}+\frac{944784b^{23}}{a^{27}}-\frac{17006112b^{28}}{a^{33}}+\frac{306110016b^{33}}{a^{39}}-\frac{5509980288b^{38}}{a^{45}}+\cdots\cdots$$

662. $$\frac{25b^3}{a}+\frac{625ab^5}{243}+\frac{15625a^3b^7}{59049}+\frac{390625a^5b^9}{14348907}+\frac{9765625a^7b^{11}}{3486784401}+\frac{244140625a^9b^{13}}{847288609443}+\frac{6103515625\,a^{11}b^{15}}{205891132094649}+\frac{152587890625\,a^{13}b^{17}}{50031545098999707}+\cdots\cdots$$

663. $$\frac{4}{9}a^6b^4-\frac{128a^6}{2187b}+\frac{4096a^6}{531441b^6}-\frac{131072a^6}{129140163b^{11}}+\frac{4194304a^6}{31381059609b^{16}}-\frac{134217728a^6}{7625597484987b^{21}}+\frac{4294967296a^6}{1853020188851841b^{26}}-\frac{137438953472a^6}{450283905890997363b^{31}}+\cdots\cdots$$

664 $$2a^3b+\frac{9}{a^2b^4}+\frac{81}{2a^7b^9}+\frac{729}{4a^{12}b^{14}}+\frac{6561}{8a^{17}b^{19}}+\frac{59049}{16a^{22}b^{24}}+\frac{531441}{32a^{27}b^{29}}+\frac{4782969}{64a^{32}b^{34}}+\cdots\cdots$$

665. $$\frac{a^3b^5}{5}+\frac{ab^6}{50}+\frac{b^7}{500a}+\frac{b^8}{5000a^3}+\frac{b^9}{50000a^5}+\frac{b^{10}}{500000a^7}+\frac{b^{11}}{5000000a^9}+\frac{b^{12}}{50000000a^{11}}+\cdots\cdots$$

666. $$5a^7x^8+\frac{a^{14}x^{16}}{2b^8y^7}+\frac{a^{21}x^{24}}{20b^{16}y^{14}}+\frac{a^{28}x^{32}}{200b^{24}y^{21}}+\frac{a^{35}x^{40}}{2000b^{32}y^{28}}+\frac{a^{42}x^{48}}{20000b^{40}y^{35}}+\frac{a^{49}x^{56}}{200000b^{48}y^{42}}+\frac{a^{56}x^{64}}{2000000b^{56}y^{49}}+\cdots\cdots$$

667. $$\sqrt{a+b}+\frac{a+b}{3\sqrt{(a-b)^2}}+\frac{(a+b)\sqrt{a+b}}{3(a-b)\sqrt{a-b}}+\frac{(a+b)^2}{(a-b)^2}+$$

$$\frac{(a+b)^2\sqrt{a+b}}{(a-b)^2\sqrt{(a-b)^2}}+\frac{(a+b)^3}{\sqrt[3]{(a-b)^3\,a-b}}+\frac{(a+b)^3\sqrt{a+b}}{(a-b)^4}+\frac{(a+b)^4}{\sqrt[3]{(a-b)^4\sqrt{(a-b)^2}}}$$
$$+\cdots\cdots$$

668. $$\frac{a\,b}{\sqrt{a^2+b^2}}-\frac{a^2b^2\sqrt[3]{a^3+b^3}}{a^2+b^2}+\frac{a^3b^3\sqrt[3]{(a^3+b^3)^2}}{(a^2+b^2)\sqrt{a^2+b^2}}-\frac{a^4b^4(a^3+b^3)}{(a^2+b^2)^2}$$
$$+\frac{a^5b^5(a^3+b^3)\sqrt[3]{a^3+b^3}}{(a^2+b^2)^2\sqrt{a^2+b^2}}-\frac{a^6b^6\,(a^3+b^3)\sqrt[3]{(a^3+b^3)^2}}{(a^2+b^2)^3}$$
$$+\frac{a^7b^7\,(a^3+b^3)^2}{(a^2+b^2)^3\sqrt{a^2+b^2}}-\frac{a^8b^8(a^3+b^3)^2\sqrt[3]{a^3+b^3}}{(a^2+b^2)^4}$$
$$+\cdots\cdots$$

669. $$\sqrt[3]{\frac{a^2b^2}{b^2-a^2}}+\sqrt{\frac{b^3-a^3}{ab}}\times\sqrt[3]{\frac{ab}{(b^2-a^2)^2}}+\frac{a^2+ab+b^2}{ab(a+b)}+$$
$$\frac{a^2+ab+b^2}{a^2b^2(a+b)}\sqrt{\frac{b^3-a^3}{ab}}\times\sqrt[3]{\frac{a^2b^2}{b^2-a^2}}+$$
$$\frac{(b^3-a^3)\,(a^2+ab+b^2)}{a^3b^3\,(a+b)}\sqrt[3]{\frac{ab}{(b^2-a^2)^2}}+\frac{(a^2+ab+b^2)^2}{a^3b^3(a+b)^2}\sqrt{\frac{b^3-a^3}{ab}}+$$
$$\frac{(b-a)(a^2+ab+b^2)^3}{a^5b^5(a+b)^2}\sqrt[3]{\frac{a^2b^2}{b^2-a^2}}+\frac{(b-a)\,(a^2+ab+b^2)^3}{a^5b^5(a+b)^2}\sqrt{\frac{b^3-a^3}{ab}}\times$$
$$\sqrt[3]{\frac{ab}{(b^2-a^2)^2}}+\cdots\cdots$$

670. $$\frac{a^6b^4}{4}+\frac{a^{11}b^9}{36}+\frac{a^{16}b^{14}}{432}+\frac{a^{21}b^{19}}{5832}+\frac{5\,a^{26}b^{24}}{419904}+\frac{a^{31}b^{29}}{1259712}+$$
$$\frac{7\,a^{36}b^{34}}{136048896}+\frac{a^{41}b^{39}}{306110016}+\cdots\cdots$$

671. $$\frac{7^6a^4}{b^2}+\frac{2\times7^9a^7}{3^7b^5}+\frac{7^{12}a^{10}}{3^{13}b^8}+\frac{2^2\times7^{15}a^{13}}{3^{21}b^{11}}+\frac{5\times7^{18}a^{16}}{3^{28}b^{14}}+$$
$$\frac{2\times7^{21}a^{19}}{3^{34}b^{17}}+\frac{7^{25}a^{22}}{3^{42}b^{20}}+\frac{2^3\times7^{27}a^{25}}{3^{49}b^{23}}+\cdots\cdots$$

672. $2^{12}a^4b^8 + \frac{2^{19}a^2b^{10}}{7^3} + \frac{2^{24}\times 5b^{12}}{7^6} + \frac{2^{32}b^{14}}{7^9a^2} + \frac{2^{36}\times 5b^{16}}{7^{12}a^4} + \frac{2^{43}\times 3b^{18}}{7^{15}a^6} + \frac{2^{48}b^{20}}{7^{17}a^8} + \frac{2^{57}b^{22}}{7^{21}a^{10}} + \ldots\ldots$

673. $36a^4x^6 - \frac{452a^8x^9}{5b^2y^3} + \frac{5888a^8x^{12}}{25b^4y^6} - \frac{31104a^{10}x^{15}}{125b^6y^9} + \frac{46656a^{12}x^{18}}{125b^8y^{12}} - \frac{1679616a^{14}x^{21}}{3125b^{10}y^{15}} + \frac{11757312a^{16}x^{24}}{15625b^{12}y^{18}} - \frac{80621568a^{18}x^{27}}{78125b^{14}y^{21}} + \ldots\ldots$

674. $\frac{3^6a^{30}b^{18}}{5^6} - \frac{2\times 3^{11}a^{39}b^{17}}{5^{11}} + \frac{3^{17}a^{48}b^{16}}{5^{16}} - \frac{2^2\times 3^{21}a^{57}b^{15}}{5^{21}} + \frac{3^{26}a^{66}b^{14}}{5^{25}} - \frac{2\times 3^{32}a^{75}b^{13}}{5^{31}} + \frac{7\times 3^{36}a^{84}b^{12}}{5^{36}} - \frac{2^3\times 3^{41}a^{93}b^{11}}{5^{41}} + \ldots\ldots$

675. $\frac{a^{56}b^{40}}{2^8} - \frac{a^{63}b^{48}}{2^5\times 3^3} + \frac{a^{70}b^{56}}{2^4\times 3^5} - \frac{a^{77}b^{64}}{3^9} + \frac{5a^{84}b^{72}}{3^{12}} - \frac{2^3a^{91}b^{80}}{3^{14}} + \frac{2^4\times 7a^{98}b^{88}}{3^{18}} - \frac{2^9a^{105}b^{96}}{3^{21}} + \ldots\ldots$

676. $2^2 \times 3^{-2} \times 5^2a^{16}b^{10} + 2^3 \times 3^{-3} \times 5^2 \times 7a^{24}b^{15}x^{-5}y^{-8} + 2^2 \times 3^{-5} \times 5^2 \times 7^2a^{32}b^{20}x^{-10}y^{-16} + 2^4 \times 3^{-5} \times 5^2 \times 7^3a^{40}b^{25}x^{-15}y^{-24} + 2^2 \times 3^{-6} \times 5^3 \times 7^4a^{48}b^{30}x^{-20}y^{-32} + 2^3 \times 3^{-6} \times 5^2 \times 7^5a^{56}b^{35}x^{-25}y^{-40} + 2^2 \times 3^{-8} \times 5^2 \times 7^7a^{64}b^{40}x^{-30}y^{-48} + 2^3 \times 3^{-9} \times 5^2 \times 7^7a^{72}b^{45}x^{-35}y^{-56} + \ldots\ldots$

677. $3^{-2}a^{-22}b^{16} - \frac{3^{-2}a^{-33}b^{24}x^{-8}y^{11}}{5} + \frac{3^{-1}a^{-44}b^{32}x^{-16}y^{22}}{10^2} - \frac{3^{-2}a^{-55}b^{40}x^{-24}y^{33}}{250} + \frac{3^{-2}a^{-66}b^{48}x^{-32}y^{44}}{2000} - \frac{3^{-1}a^{-77}b^{56}x^{-40}y^{55}}{50000} + \frac{7\times 3^{-2}a^{-88}b^{64}x^{-48}y^{66}}{10^6} - \frac{3^{-2}a^{-99}b^{72}x^{-56}y^{77}}{1250000} + \ldots\ldots$

678. $\{a^2+b^2\}^{-1}-2\{ab\{a^2+b^2\}\}^{-1}+3\{a^2b^2\{a^2+b^2\}\}^{-1}$
$-4\{a^3b^3\{a^2+b^2\}\}^{-1}+5\{a^4b^4\{a^2+b^2\}\}^{-1}$
$-6\{a^5b^5\{a^2+b^2\}\}^{-1}+7\{a^6b^6\{a^2+b^2\}\}^{-1}$
$-8\{a^7b^7\{a^2+b^2\}\}^{-1}+\cdots\cdots$

679. $\sqrt[5]{\{a^2+b^2\}^2}+2+\frac{3\sqrt[3]{a^2+b^2}}{a^2+b^2}+\frac{4\sqrt[5]{(a^2+b^2)^2}}{(a^2+b^2)^2}+$
$\frac{5}{(a^2+b^2)^2}+\frac{6\sqrt[3]{a^2+b^2}}{(a^2+b^2)^3}+\frac{7\sqrt[3]{(a^2+b^2)^2}}{(a^2+b^2)^4}+\frac{8}{(a^2+b^2)^4}+\cdots$

680. $0,001a^{-3}b^{-9}-0,0021a^{-4}b^{-12}x^{-5}y^{-2}$
$+0,00294a^{-5}b^{-15}x^{-10}y^{-4}$
$-0,00343a^{-6}b^{-18}x^{-15}y^{-6}+$
$0,0036015a^{-7}b^{-21}x^{-20}y^{-8}$
$-0,00352947a^{-8}b^{-24}x^{-25}y^{-10}$
$+0,003294172a^{-9}b^{-27}x^{-30}y^{-1}$
$-0,0029647548a^{-10}b^{-30}x^{-35}y^{-14}+\cdots\cdots$

681. $2^{-9}a^{-3}b^{-33}+2^{-12}\times 3\times 5^{-3}a^{-4}b^{-44}x^{-2}y^{-1}$
$+2^{-14}\times 3\times 5^{-6}a^{-5}b^{-55}x^{-4}y^{-2}+$
$2^{-17}\times 5^{-8}a^{-6}b^{-66}x^{-6}y^{-3}+2^{-21}\times 3$
$\times 5^{-11}a^{-7}b^{-77}x^{-8}y^{-4}+2^{-24}\times 3\times 5^{-15}$
$\times 7a^{-8}b^{-88}x^{-10}y^{-5}+2^{-25}\times 5^{-18}$
$\times 7a^{-9}b^{-99}x^{-12}y^{-6}+2^{-28}\times 3^2$
$\times 5^{-21}a^{-10}b^{-110}x^{-14}y^{-7}+\cdots\cdots$

682. $5^{-3}a^6b^{-9}-3\times 5^{-7}a^{10}b^{-15}+2\times 3$
$\times 5^{-11}a^{14}b^{-21}-2\times 5^{-14}a^{18}b^{-27}+3$
$\times 5^{-18}a^{22}b^{-33}-3\times 5^{-23}\times 7a^{26}b^{-39}+2^2$
$\times 5^{-27}\times 7a^{30}b^{-45}-2^2\times 3^2\times 5^{-31}a^{34}b^{-51}$
$+\cdots\cdots$

683. $2^{12}a^{-5}b^{5} + 2^{16} \times 3 \times 5^{-4}a^{-5}b^{6} + 2^{21} \times 3 \times 5^{-8}a^{-7}b^{9} + 2^{25} \times 5^{-11}a^{-9}b^{12} + 2^{28} \times 3 \times 5^{-15}a^{-11}b^{15} + 2^{32} \times 3 \times 5^{-20} \times 7a^{-15}b^{18} + 2^{38} \times 5^{-24} \times 7a^{-15}b^{21} + 2^{42} \times 3^{2} \times 5^{-28}a^{-17}b^{24} + \ldots\ldots$

684. $\frac{a^{6}x^{9}}{10^{3}} + \frac{5}{10^{5}}a^{10}x^{12}y^{-6} + \frac{6}{10^{7}}a^{14}x^{15}y^{-12} + \frac{1}{10^{8}}a^{18}x^{18}y^{-18} + \frac{15}{10^{11}}a^{22}x^{21}y^{-24} + \frac{21}{10^{13}}a^{26}x^{24}y^{-30} + \frac{28}{10^{15}}a^{30}x^{27}y^{-36} + \frac{36}{10^{17}}a^{34}x^{30}y^{-42} + \ldots\ldots$

685. $\frac{2^{6}x^{21}}{5^{3}a^{6}} + \frac{2^{10}x^{30}}{5^{4}a^{15}} + \frac{2^{15}x^{39}}{5^{6}a^{24}} + \frac{2^{19} \times 5x^{48}}{5^{9}a^{33}} + \frac{2^{22} \times 5x^{57}}{5^{10}a^{42}} + \frac{2^{26} \times 7x^{66}}{5^{12}a^{51}} + \frac{2^{32} \times 7x^{75}}{5^{15}a^{60}} + \frac{2^{36}x^{84}}{5^{15}a^{69}} + \ldots\ldots$

686. $\frac{a^{15}}{8x^{6}} + \frac{a^{20}b^{2}}{8x^{8}y^{7}} + \frac{a^{25}b^{4}}{12x^{10}y^{14}} + \frac{5a^{30}b^{6}}{108x^{12}y^{21}} + \frac{5a^{35}b^{8}}{216x^{14}y^{28}} + \frac{7a^{40}b^{10}}{648x^{16}y^{35}} + \frac{7a^{45}b^{12}}{1458x^{18}y^{42}} + \frac{a^{50}b^{14}}{486x^{20}y^{49}} + \ldots\ldots$

687. $\frac{1000a^{21}}{27x^{21}} + \frac{10000a^{33}}{9x^{33}} + \frac{200000a^{45}}{9x^{45}} + \frac{10000000a^{57}}{27x^{57}} + \frac{50000000a^{69}}{9x^{69}} + \frac{700000000a^{81}}{9x^{81}} + \frac{2800000000a^{93}}{27x^{93}} + \frac{4000000000a^{105}}{3x^{105}} + \ldots\ldots$

688. $\frac{10^{3}x^{6}}{5^{3}a^{6}} + \frac{2 \times 10^{4}b^{3}x^{8}}{5^{4}a^{8}y^{3}} + \frac{2^{3} \times 10^{5}b^{6}x^{10}}{5^{6}a^{10}y^{6}} + \frac{2^{3} \times 10^{7}b^{9}x^{12}}{5^{9}a^{12}y^{9}} + \frac{2^{3} \times 10^{8}b^{12}x^{14}}{5^{10}a^{14}y^{12}} + \frac{2^{5} \times 7 \times 10^{8}b^{15}x^{16}}{5^{12}a^{16}y^{15}} + \frac{2^{8} \times 7 \times 10^{9}b^{18}x^{18}}{5^{15}a^{18}y^{18}} + \frac{2^{9} \times 10^{10}b^{21}x^{20}}{5^{15}a^{20}y^{21}} + \ldots\ldots$

689. $3^{5} \times 11^{-5}a^{-6}b^{-6} + 2^{-1} \times 3^{5} \times 7 \times 11^{-4}a^{-10}b^{-10} + 2^{-1} \times 3^{6} \times 7^{2} \times 11^{-5}a^{-14}b^{-14} + 2^{-2} \times 3^{6} \times 5 \times 7^{3} \times 11^{-6}a^{-18}b^{-18} + 2^{-4} \times 3^{8} \times 5 \times 7^{4} \times 11^{-7}a^{-22}b^{-22} + 2^{-5} \times 3^{9} \times 7^{6} \times 11^{-8}a^{-26}b^{-26} + 2^{-4} \times 3^{9} \times 7^{7} \times 11^{-9}a^{-30}b^{-30} + 2^{-5} \times 3^{12} \times 7^{7} \times 11^{-10}a^{-34}b^{-34} + \ldots\ldots$

690. $\frac{1}{625a^8x^{12}} - \frac{24b^2y^3}{3125a^{10}x^{15}} + \frac{72b^4y^6}{3125a^{12}x^{18}} - \frac{864b^6y^9}{15625a^{14}x^{24}} + \frac{9072b^8y^{12}}{78125a^{16}x^{24}} - \frac{435456b^{10}y^{15}}{1953125a^{18}x^{27}} + \frac{3919104b^{12}y^{18}}{9765625a^{20}x^{30}} - \frac{6718464b^{14}y^{21}}{9765625a^{22}x^{33}} + \ldots\ldots$

691. $2^{-8}a^{-8}x^{12}+2^{-8}\times5a^{-15}x^{17}+2^{-11}\times5^3a^{-18}x^{22}+2^{-12}\times5^4a^{-23}x^{27}+2^{-16}\times5^5\times7a^{-28}x^{32}+2^{-15}\times5^5\times7a^{-33}x^{37}+2^{-18}\times3\times5^6\times7a^{-38}x^{42}+2^{-19}\times3\times5^8a^{-43}x^{47}+\ldots\ldots$

692. $3^{-4}a^{20}b^{-8}+2^5\times3^{-6}a^{23}b^{-5}+2^5\times3^{-8}\times5a^{26}b^{-2}+2^5\times3^{-10}\times5a^{29}b+2^4\times3^{-12}\times5\times7a^{32}b^4+2^8\times3^{-14}\times7a^{35}b^7+2^8\times3^{-15}\times7a^{38}b^{10}+2^{10}\times3^{-17}\times5a^{41}b^{13}+\ldots\ldots$

693. $\frac{3^4a^8}{2^4b^{20}}+\frac{3^6a^5}{2^3b^{23}}+\frac{3^8\times5a^2}{2^5b^{26}}+\frac{3^{10}\times5}{2^5ab^{29}}+\frac{3^{12}\times5\times7}{2^8a^4b^{32}}+\frac{3^{14}\times7}{2^6a^7b^{35}}+\frac{3^{17}\times7}{2^8a^{10}b^{38}}+\frac{3^{19}\times5}{2^8a^{13}b^{41}}+\ldots\ldots$

694. $\frac{x^{32}}{10^4a^{28}}+\frac{4x^{48}}{10^6a^{42}}+\frac{x^{64}}{10^7a^{56}}+\frac{2x^{80}}{10^9a^{70}}+\frac{35x^{96}}{10^{12}a^{84}}+\frac{56x^{112}}{10^{14}a^{98}}+\frac{84x^{128}}{10^{16}a^{112}}+\frac{12x^{144}}{10^{17}a^{126}}+\ldots\ldots$

695. $10^4a^{28}x^{-32}+4\times10^6a^{42}x^{-48}+10^9a^{56}x^{-64}+2\times10^{11}a^{70}x^{-80}+35\times10^{12}a^{84}x^{-96}+56\times10^{14}a^{98}x^{-112}+84\times10^{16}a^{112}x^{-128}+12\times10^{19}a^{126}x^{-144}+\ldots\ldots$

696. $10^4\times3^{-4}a^8x^{12}+10^5\times3^{-4}a^{10}b^{-4}x^{15}y^{-5}+10^5\times3^{-4}\times5^4a^{12}b^{-8}x^{18}y^{-10}+10^5\times3^{-4}\times5^5a^{14}b^{-12}x^{21}y^{-15}+3^{-4}\times5\times7a^{16}b^{-16}x^{24}y^{-20}+10^2\times3^{-4}\times5^7\times7a^{18}b^{-20}x^{27}y^{-25}+3^{-5}\times5^{10}\times7a^{20}b^{-24}x^{30}y^{-30}+3^{-5}\times5^{12}a^{22}b^{-28}x^{33}y^{-35}+\ldots\ldots$

697. $2^{-4} \times 3^4 a^{-20} x^{20} + 2^{-4} \times 3^5 \times 5^{-1} \times 7 a^{-25} b^5 x^{25} y^{-5} + 2^{-7} \times 3^6 \times 5^{-1} \times 7^2 a^{-30} b^6 x^{30} y^{-6} + 2^{-8} \times 3^7 \times 5^{-2} \times 7^5 a^{-35} b^9 x^{35} y^{-9} + 2^{-12} \times 3^8 \times 5^{-5} \times 7^5 a^{-40} b^{12} x^{40} y^{-12} + 2^{-11} \times 3^9 \times 5^{-5} \times 7^6 a^{-45} b^{15} x^{45} y^{-15} + 2^{-14} \times 3^{11} \times 5^{-6} \times 7^7 a^{-50} b^{18} x^{50} y^{-18} + 2^{-15} \times 3^{12} \times 5^{-6} \times 7^7 a^{-55} b^{21} x^{55} y^{-21} + \ldots\ldots$

698. $2^4 \times 3^{-4} \times 5^4 a^{-24} x^8 + 2^8 \times 3^{-5} \times 5^4 a^{-30} b^4 x^{10} y^{-4} + 2^9 \times 3^{-6} \times 5^5 a^{-36} b^8 x^{12} y^{-8} + 2^{12} \times 3^{-7} \times 5^5 a^{-42} b^{12} x^{14} y^{-12} + 2^{12} \times 3^{-8} \times 5^5 \times 7 a^{-48} b^{16} x^{16} y^{-16} + 2^{17} \times 3^{-9} \times 5^4 \times 7 a^{-54} b^{20} x^{18} y^{-20} + 2^{18} \times 3^{-9} \times 5^4 \times 7 a^{-60} b^{24} x^{20} y^{-24} + 2^{21} \times 3^{-10} \times 5^5 a^{-66} b^{28} x^{22} y^{-28} + \ldots\ldots$

699. $2^4 \times 5^4 \times 7^{-4} a^{32} x^{28} + 2^5 \times 5^5 \times 7^{-4} a^{40} b^{-5} x^{35} y^{-5} + 2^5 \times 5^5 \times 7^{-4} a^{48} b^{-10} x^{42} y^{-6} + 2^5 \times 5^2 \times 7^{-4} a^{56} b^{-15} x^{49} y^{-9} + 5 \times 7^{-5} a^{64} b^{-20} x^{56} y^{-12} + 2^2 \times 5^{-1} \times 7^{-5} a^{72} b^{-25} x^{63} y^{-15} + 3 \times 5^{-2} \times 7^{-5} a^{80} b^{-30} x^{70} y^{-18} + 3 \times 5^{-2} \times 7^{-4} a^{88} b^{-35} x^{77} y^{-21} + \ldots\ldots$

OPERACIONES CON LAS CANTIDADES AFECTADAS DE EXPONENTES FRACCIONARIOS.

Suma.

700. $\left\{1+a^{\frac{m}{n}}\right\}a^{\frac{m}{n}}b^{\frac{p}{q}}+\left\{b^{\frac{m}{n}}-a^{\frac{2p}{q}}\right\}a^{\frac{p}{q}}b^{\frac{m}{n}}$.

701. $a^{\frac{1}{4}}\left\{a^{\frac{1}{2}}b^{\frac{4}{7}}\left\{b^{\frac{1}{7}}+1\right\}+b^{\frac{3}{8}}-b^{\frac{1}{7}}\right\}$.

702. $a^{\frac{2}{7}}\left\{a^{\frac{1}{7}}\left\{\frac{2}{3}b^{\frac{2}{5}}-\frac{3}{5}b^{\frac{5}{8}}\right\}-b^{\frac{3}{5}}\right\}+\frac{2}{7}a^{\frac{3}{8}}b^{\frac{2}{5}}$.

703. $a^{\frac{5}{12}}\left\{1{,}9a^{\frac{1}{4}}b^{\frac{5}{7}}+x^{\frac{6}{13}}\left\{2^{\frac{3}{5}}+3^{\frac{3}{5}}a^{\frac{1}{6}}x^{\frac{1}{13}}\right\}\right\}$.

704. $\left\{\frac{m}{n}\right\}^{\frac{2}{5}}\left\{\left\{\frac{p}{q}\right\}^{\frac{2}{5}}\left\{\left\{\frac{p}{q}\right\}^{\frac{1}{35}}+\left\{\frac{m}{n}\right\}^{\frac{1}{35}}\right\}\right\}-\left\{\frac{m}{p}\right\}^{\frac{5}{7}}\left\{\left\{\frac{n}{q}\right\}^{\frac{5}{7}}\left\{\left\{\frac{n}{q}\right\}^{\frac{1}{28}}+\left\{\frac{m}{p}\right\}^{\frac{1}{28}}\right\}\right\}$.

705. $a^{\frac{2}{mn}}y^{\frac{2}{mn}}\left\{\left\{\frac{ab^2}{x^2y}\right\}^{\frac{1}{mn}}\left\{\left\{\frac{a^3b^2}{x^2y^3}\right\}^{m^2}+\left\{\frac{a^3b^2}{x^2y^3}\right\}^{n^2}\right\}-\left\{\frac{x^3}{b^3}\right\}^{\frac{1}{mn}}\left\{\left\{\frac{a^2x^3}{b^3y^2}\right\}^{n^2}+\left\{\frac{a^2x^3}{b^3y^2}\right\}^{m^2}\right\}\right\}$.

Resta.

706. $a^{\frac{2}{3}}\ b^{\frac{5}{2}}\{1-a\}+\ a^{\frac{1}{2}}\ b^{\frac{2}{3}}\{a+1\}.$

707. $a^{\frac{3}{7}}\ b^{5}\left\{a^{\frac{2}{7}}-1\right\}+a^{\frac{1}{2}}\ b^{2}\left\{1-a^{\frac{1}{4}}\right\}.$

708. $a^{7}\ b^{\frac{2}{5}}\left\{3b^{\frac{1}{5}}-2\right\}-a^{\frac{2}{3}}\ b^{3}.$

709. $a^{\frac{1}{3}}\ b^{\frac{1}{5}}\left\{a^{\frac{1}{3}}\left\{\sqrt[5]{8b^{2}}+7\sqrt[5]{b}-\sqrt[5]{27}\right\}-2\right\}.$

710. $2\{a^{2}-b^{3}\}^{\frac{5}{4}}.$

711. $\{a-b\}^{\frac{5}{2}}\left\{\{a-b\}^{2}-1\right\}-\{a+b\}^{\frac{5}{4}}\{a+b-1\}.$

Multiplicacion.

712. $a^{\frac{13}{15}}b^{\frac{35}{28}}.$ **713.** $a^{\frac{34}{15}}b^{\frac{55}{14}}.$ **714.** $15\{ab\}^{\frac{25}{11}}.$

715. $2a^{\frac{64}{55}}b^{\frac{15}{3}}\sqrt[5]{81}.$ **716.** $a^{\frac{55}{45}}b^{\frac{38}{33}}\sqrt[12]{\left\{\frac{5}{2}\right\}^{7}}.$

717. $-4,75\,a^{2,1}\,b^{\frac{29}{12}}.$

718. $a^{\frac{19}{15}} - a^{\frac{9}{15}} b^{\frac{5}{8}} \left\{ b^{\frac{1}{8}} + a^{\frac{1}{15}} \right\} + b^{\frac{11}{8}}$.

719. $15a^{\frac{16}{7}} b^{\frac{28}{5}} - 25a^{\frac{20}{21}} b^{12} - 33a^{13} b^{\frac{37}{45}} + 55a^{\frac{35}{3}} b^{\frac{65}{9}}$.

720. $21a^{\frac{3}{2}} b^{\frac{2}{3}} - 27a^{\frac{27}{20}} b^{\frac{5}{7}} - 21a^{\frac{69}{44}} b^{\frac{7}{8}} - 35a^{\frac{3}{4}} b^{\frac{4}{3}} + 45a^{\frac{3}{5}} b^{\frac{29}{21}} + 35a^{\frac{9}{11}} b^{\frac{37}{24}}$.

721. $0,4a^{\frac{23}{20}} b^{\frac{8}{7}} - 0,1a^{\frac{5}{4}} b^{\frac{29}{21}} - 0,14a^{\frac{45}{44}} b^{\frac{52}{63}} - 20a^{\frac{1}{2}} b^{\frac{34}{63}} + 5a^{\frac{3}{5}} b^{\frac{7}{9}} + 7a^{\frac{41}{110}} b^{\frac{2}{9}}$.

722. $15^{\frac{2}{3}} a^{3,6} - 0,07a^{3,75} b^{\frac{4}{5}} \sqrt[3]{25} - a^4 b^{0,75} \sqrt[15]{45^6 \times 5^4} - a^{0,6} b^2 \sqrt[15]{6^9 \times 3} + 0,07 a^{0,75} b^{\frac{10}{3}} \sqrt[5]{8} + ab^{2,75} \sqrt[5]{18^2 \times 2}$.

723. $\{a+b\}^{\frac{4}{3}} - \{a-b\}^{1,5}$.

724. $\{a+b\}^{\frac{17}{12}} - \{a^2-b^2\}^{0,75} - \{a^2-b^2\}^{\frac{2}{3}} + \{a-b\}^{\frac{17}{12}}$.

725. $\{a^3-b\}^{\frac{16}{15}} - \{a^4-a^3b^3-ab+b^4\}^{0,4} - \{a^4-a^3b^3-ab+b^4\}^{\frac{2}{3}} + \{a-b^3\}^{\frac{16}{15}}$.

Division.

726. $a^{\frac{3}{4}}b^{\frac{7}{9}}$. **727.** $7a^{\frac{5}{4}}b^{\frac{7}{9}}$. **728.** $2a^{0,2}b^{0,03}$.

729. $25a^{2,3}b^{0,2}c^{4}$. **730.** $5^{\frac{1}{2}}a^{\frac{1}{3}}b^{\frac{2}{3}}-4^{\frac{1}{2}}a^{\frac{2}{3}}b^{\frac{1}{2}}$.

731. $2^{\frac{1}{3}}a^{\frac{1}{3}}b^{\frac{1}{2}}+3^{\frac{1}{3}}a^{\frac{1}{2}}b^{\frac{1}{3}}c^{2}$.

732. $2^{\frac{1}{2}}a^{\frac{2}{3}}b^{\frac{3}{7}}-5^{\frac{1}{5}}a^{\frac{2}{7}}b^{\frac{1}{7}}$.

733. $2a^{0,5}b^{1,2}+0,3a^{0,02}b^{0,1}$,

734. $3^{-\frac{2}{3}}a^{\frac{3}{4}}b^{-\frac{2}{5}}-5^{-\frac{3}{4}}a^{-\frac{2}{3}}b^{\frac{3}{5}}$.

735. $2^{-\frac{3}{2}}a^{-\frac{2}{7}}b^{-\frac{4}{3}}-3^{-\frac{4}{5}}a^{\frac{2}{3}}b^{\frac{2}{5}}$.

Potencias.

736. $9a^{\frac{4}{3}}b^{\frac{6}{5}}$. **737.** $3^{\frac{4}{5}}a^{\frac{3}{2}}b^{\frac{6}{5}}$.

738. $25^{\frac{2}{3}}a^{3}b^{2,5}$. **739.** $0,216a^{\frac{4}{3}}b^{1,5}$.

740. $\frac{8}{3\sqrt{3}}a^{3}b^{\frac{4}{3}}+8\sqrt[4]{\left\{\frac{4}{3}\right\}^{3}}a^{2,1}b^{\frac{37}{24}}+16a^{1,2}b^{1,75}$.

741. $a^{\frac{4}{3}} - 2a^{\frac{2}{3}} b^{\frac{3}{2}} + b^{5}.$

742. $3^{1,2} a^{\frac{10}{3}} x^{\frac{4}{7}} - \frac{2^{1,75}}{3^{0,15}} a^{\frac{5}{3}} b^{\frac{6}{7}} x^{\frac{2}{7}} y^{\frac{7}{9}} + \left\{\frac{2}{3}\right\}^{1,8} b^{\frac{12}{7}} y^{\frac{14}{9}}.$

743. $0,49a^{-\frac{3}{2}}b - \frac{20,6\times 7}{30,6\times 5} + \left\{\frac{4}{9}\right\}^{\frac{3}{5}} a^{1,5}b^{-1}.$

744. $27a^{\frac{3}{2}} - 54ab^{\frac{1}{3}} + 36a^{\frac{1}{2}} b^{\frac{2}{3}} - 8b.$

745. $3^{\frac{2}{3}} a^{2,625} b^{\frac{15}{7}} - \frac{3^{2+\frac{2}{9}}}{4^{\frac{2}{9}}} a^{1,75} b^{\frac{10}{7}} x^{\frac{7}{11}} y^{0,6} + \frac{3^{2+\frac{7}{9}}}{16^{\frac{7}{9}}} a^{0,875} b^{\frac{5}{7}} x^{\frac{14}{11}} y^{1,2} - \left\{\frac{3}{4}\right\}^{\frac{7}{3}} x^{\frac{21}{11}} y^{1,8}.$

746. $0,027a^{-2}b^{2,25} - 0,81a^{-\frac{4}{3}} b^{1,5} x^{0,6} y^{-\frac{5}{3}} + 8,1a^{-\frac{2}{3}} b^{0,75} x^{1,2} y^{-\frac{10}{3}} - 27x^{1,8} y^{-5}.$

747. $2^{2+\frac{2}{3}} \times 3^{1+\frac{1}{3}} a^{12} x^{-3} - 2^{4+\frac{3}{5}} \times 3^{-1} a^{9} b^{-0,75} x^{-2,25} y^{\frac{4}{3}} + 2^{3+\frac{8}{15}} \times 3^{\frac{1}{3}} a^{6} b^{-1,5} x^{-1,5} y^{\frac{8}{3}} - 2^{4+\frac{7}{15}} \times 3^{-\frac{1}{3}} a^{3} b^{-2,25} x^{-0,75} y^{4} + 2^{2,4} b^{-3} y^{5+\frac{1}{3}}.$

748. $1,6^{16}a^{2,4}b^{3,5}-4\times0,6^{0,75}\times1,6^{12}a^{1,8}b^{2,625}\sqrt[7]{x^9}\,y^{0,625}$
$+6\times1,6^{8}\times0,6^{1,5}a^{1,2}b^{1,75}\sqrt[14]{x^9}\,y^{1,25}-4\times1,6^{4}$
$\times0,6^{2,25}a^{0,6}b^{0,875}\sqrt[7]{x^5}\,y^{1,875}+0,6^{3}\sqrt[28]{x^9}\,y^{2,5}.$

749. $0,0625a^6\sqrt[8]{x^5}-0,35a^5x^2\sqrt[3]{y^7}+0,735a^4\sqrt[4]{x^3}\sqrt[6]{y^7}$
$-0,686a^3\sqrt[2]{x^3}\sqrt[9]{y^7}+0,2401a^2\sqrt[12]{y^7}.$

750. $2a^3x^4\sqrt{2x}+4,5ab^3xy^2\sqrt{2x}+\frac{3,375b^6y^4}{ax\sqrt{2x}}$
$-\frac{0,84375b^9y^6}{a^3x^4\sqrt{2x}}+\frac{0,474609375b^{12}y^8}{a^5x^7\sqrt{2x}}-\frac{0,355957031125b^{15}y^{10}}{a^7x^{10}\sqrt{2x}}$
$+\frac{0,311462402343375b^{18}y^{12}}{16a^9x^{13}\sqrt{2x}}-\ldots\ldots$

751. $x^2\sqrt[5]{625a^4x^2}-\frac{2,4b^3y}{\sqrt[5]{5ax^3}}-\frac{0,144b^6y^2}{ax^3\sqrt[5]{5ax^3}}+\frac{0,03456b^9y^3}{a^2x^6\sqrt[5]{5ax^3}}$
$-\frac{0,0110048b^{12}y^4}{a^3x^9\sqrt[5]{5ax^3}}+\frac{0,0043794432b^{15}y^5}{a^4x^{12}\sqrt[5]{5ax^3}}-\frac{0,0018586196485b^{18}y^6}{a^5x^{15}\sqrt[5]{5ax^3}}$
$+\ldots\ldots$

752. $ax^2\sqrt[7]{7^5a^3x}+\frac{15a^3x^2}{7\sqrt[7]{7^2a^4x^6}}-\frac{45a^4x}{7^3\sqrt[7]{7^2a^4x^6}}+\frac{405a^5}{7^5\sqrt[7]{7^2a^4x^6}}$
$-\frac{4860a^6}{7^7x\sqrt[7]{7^2a^4x^6}}+\frac{67068a^7}{7^9x^2\sqrt[7]{7^2a^4x^6}}-\frac{1006020a^8}{7^{11}x^3\sqrt[7]{7^2a^4x^6}}+\ldots\ldots$

753. $a^{0,5}x^{0,5}\sqrt[3]{7^2x^{0,1}}-\frac{10b^{0,5}\sqrt[3]{y^2}}{3a^{0,25}x^{0,1}\sqrt[3]{7^2x^{0,5}}}-\frac{25b\sqrt[3]{y^4}}{63ax\sqrt[3]{7x^{0,2}}}$

$$+\frac{500b^{1,5}y^2}{3\sqrt{3969a^{1,75}x^{1,8}7x^{0,2}}}-\frac{4375b^2y^{\frac{8}{3}}}{3\sqrt{83349a^{2,5}x^2\sqrt{7x^2}}}+$$

$$\frac{43750b^{2,5}y^{\frac{10}{3}}}{3\sqrt{1750329a^{3,25}x^{3,4}\sqrt{7x^{0,2}}}}-\frac{1421875b^3y^4}{3\sqrt{110270727a^4x^{4,2}\sqrt{7x^{0,2}}}}+\cdots\cdots$$

754. $a^{0,1}\,x^{0,015}\sqrt{3}+\frac{0,1a^{0,2}y^{0,5}}{x^{0,015}\sqrt{3}}-\frac{0,005a^{0,3}y}{3x^{0,045}\sqrt{3}}+$

$$\frac{0,0005a^{0,4}y^{1,5}}{9x^{0,075}\sqrt{3}}-\frac{0,0000625a^{0,5}y^2}{27x^{0,105}\sqrt{3}}+\frac{0,00000875a^{0,6}y^{2,5}}{81x^{0,135}\sqrt{3}}$$

$$-\frac{0,0000013125a^{0,7}y^3}{243x^{0,165}\sqrt{3}}+\cdots\cdots$$

755. $a^{0,1}\,b^{0,01}$ — $0,14\,a^{-0,4}\,b^{-0,04}\,x^{0,01}\,y^{0,3}$

— $0,0392\,a^{-0,9}\,b^{-0,09}\,x^{0,02}\,y^{0,6}$

— $0,0164644\,a^{-1,4}\,b^{-0,14}\,x^{0,03}\,y^{0,9}$

— $0,0080673 6\,a^{-1,9}\,b^{-0,19}\,x^{0,04}\,y^{1,2}$

— $0,004291835 52\,a^{-2,4}\,b^{-0,24}\,x^{0,05}\,y^{1,5}$

— $0,0024034278912\,a^{-2,9}\,b^{-0,29}\,x^{0,06}\,y^{1,8}$

—.. ...

756. $0,5^{0,03}a^{0,015}b^{0,02}-\frac{0,09x^{0,7}y}{97\sqrt{0,5^{0,97}a^{0,485}b^{\frac{150}{97}}}}-\frac{0,13095x^{1,4}y^2}{197\sqrt{0,5^{1,97}a^{0,985}b^{\frac{150}{197}}}}$

$$-\frac{0,2579715x^{2,1}y^3}{0,5^{2,97}a^{1,485}b^{1,98}}-\frac{0,57463151625x^{2,8}y^4}{397\sqrt{0,5^{3,97}a^{1,985}b^{\frac{150}{397}}}}-\frac{1,3687722717075x^{3,5}y^5}{497\sqrt{0,5^{4,97}a^{2,485}b^{\frac{150}{497}}}}$$

$$-\frac{3,4013990951931375x^{4,2}y^6}{0,5^{5,97}a^{2,985}b^{3,98}}-\cdots\cdots$$

757. El tèrmino que ocupe el lugar $n+1$ será

$$T_{n+1}=\frac{-0,75\times-1,75\times-2,75\ldots\ldots\times-(n-1),75}{1\times2\times3\ldots\ldots\times n}\times$$

$$\left\{3^{0,5}a^{0,7}x^{0,2}\right\}^{-n,75}\left\{2^{0,03}b^{0,05}y^{0,7}\right\}^{n};$$

en que n representa el número de términos que preceden al que se considera.

El septimo término será

$$T'_7 = 0,5134429931640625 \times 3^{-3,375} \times 2^{0,18}a^{-4,725}b^{0,18}x^{-1,35}y^{1,2}.$$

758. El término general será

$$T'_{n+1} = \frac{-\frac{5}{7}\times-\frac{12}{7}\times-\frac{19}{7}\times-\frac{26}{7}\cdots\cdots\times-\frac{5+(n-1)7}{7}}{1\times2\times3\times4\cdots\cdots\times n} \times \left\{-0,5x^{\frac{4}{9}}y^{0,2}\right\}^n\left\{3^{\frac{5}{4}}a^{0,7}b^{\frac{3}{7}}\right\}^{\frac{5+n\times7}{7}};$$

y por lo tanto el cuarto término será

$$T'_{3+1} = T'_4 = \frac{95}{1372} \times 3^{\frac{39}{14}}a^{2,6}b^{\frac{78}{49}}x^{\frac{4}{3}}y^{0,6}.$$

El décimo ha de ser

$$T'_{9+1} = T'_{10} = \frac{116844585}{1446275274 88} \times 3^{-\frac{51}{7}}a^{-6,8}b^{-\frac{204}{49}}x^4y^{1,8}.$$

759. $$T'_{n+1} = \frac{-0,2\times-1,2\times-2,2\times-3,2\cdots\cdots\times-(n-1),2}{1\times2\times3\times4\cdots\cdots\times n}\left\{3^{-0,5}a^{-0,7}\times b^{-0,3}\right\}^{-n,2}\left\{4^{0,7}x^{-0,8}y^{-0,03}\right\}^n.$$

$$T'_7 = 0,0512512 \times 3^{3,1} \times 4^{4,2}a^{4,34}b^{1,86}x^{-1,8}y^{-0,18}.$$

760.

$$T'_{n+1} = \frac{-0,5\times-1,5\times-2,5\times-3,5\cdots\cdots\times-(n-1),5}{1\times2\times3\times4\cdots\cdots\times n}\left\{10a^{-0,2}b^2\right\}^{-n,5} \times \left\{-0,1a^{0,2}b^{-2}\right\}^n.$$

$$T_{8} = 0,00020947265625 \times 10^{-75} a^{2,9} b^{-29}.$$

761.

$$T_{n+1} = \frac{-0,7 \times -1,7 \times -2,7 \times -3,7 \ldots \ldots \times -(n-1),7}{1 \times 2 \times 3 \times 4 \ldots \ldots \times n} \left\{10^{-0,5} a^{-0,1} x^{-0,2}\right\}^{-n,7} \times \left\{-0,2^{-0,5} a^{-0,4} b^{-0,6}\right\}^{n}.$$

$$T_{5} = 12,3834375 \times 10^{1,41} a^{-1,15} b^{-2,4} x^{0,94}.$$

Ecuacion determinada de primer grado

762. $x = 18.$ **763.** $x = 13.$ **764.** $x = 17.$

765. $x = -5.$ **766.** $x = -7.$

767. $x = -12.$ **768.** $x = \frac{1573}{925}.$

769. $x = 80.$ **770.** $x = 7.$

771. $x = -3.$ **772.** $x = -\frac{31}{2}.$

773. $x = \frac{168}{55}.$ **774.** $x = \frac{47640}{1157}.$

775. $x = 67\frac{4279}{4353}.$ **776.** $x = \frac{9520}{537}.$

777. $x = \frac{7}{57908,3786}.$ **778.** $x = 2.$

779. $x = 69.$ **780.** $x = \frac{9.13.31.37.47}{5.11.248359}.$

781. $x = \{2^2 \times 3^5 + 2^3\}\{3^5 \times 2^2 - 2^3\}.$

782. $x=\frac{d-b+a^2}{a-d-1}$.

783. $x=-\frac{hbfq(cm-dl)}{dm\{(afq+beq+bfp)h-bfgq\}}$.

784. $x=\frac{a^2-b^6}{a^4b^2-b^6+ab^3-a^4b^3+ab^6}$.

785. $x=\frac{(a+b-d)(a^2-b^2)}{(a+b)^2-(c-d)(a-b)}$.

786. $x=\frac{(c+d)(a-b)+(a^4-b^4)}{(a+b)^2-(c-d)(a+b)}$.

787. $x=-\frac{b^5(a^3+a^2b+a+b)}{a^5(a^3-a^2b-a+b)}$.

788. $x=\frac{ab(a^2b+a^2+b^2)+b^3}{ab(ab^2+a^2+b^2)-a^3}$.

789. $x=\frac{a^4+a^2b^2+b^4}{ab(a^2-b^2)}$.

790. $x=\frac{a^2+ab-b^2}{a^2}$. **791.** $x=\frac{a(a+b)}{a^2+b^2}$.

792. $x=\frac{a(a+b)\{a(a^2+b^2+1)-b\}}{(a^2+b^2)\{a^3(a-b)+1\}}$.

793. $x=\frac{(a^2+b^2)\{a^2+b^2-(a-b)^2\}}{(a+b)^2\{a^2+b^2+(a-b)^2\}}$.

794. $x=\frac{(a-b)^2(a^2+b^2)\{(a-b)^2+(a+b)^3\}}{(a+b)^2\{(a+b)(a^2+b^2)+(a-b)^6\}}$.

795. $x=\frac{2a(a-b)^4}{(a+b)^6+(a-b)^6}$.

796. $x=\frac{(a^2-b^2)\{1+(a^2-b^2)(a-b)\}}{a^2+b^2}$. **797.** $x=1$.

798. $x=\frac{a^2b^2+1}{2ab}$. **799.** $x=1$.

800. $x=\left\{\frac{a-1}{a+1}\times\frac{b+1}{b-1}\right\}^2$.

801. $x=\frac{2(a+1)(a^4-b^2)(b^4-a^2)(b^2+1)}{(a-1)(b^2-1)\left\{(a^2+b)^2(b^2-a)^2+(a^2-b)^2(a+b^2)^2\right\}}$.

Sistemas determinados de ecuaciones de primer grado con dos incógnitas.

802. $x=3;\ y=2.$ **803.** $x=7;\ y=3.$

804. $x=3;\ y=-2.$ **805.** $x=-3;\ y=5.$

806. $x=2;\ y=1.$ **807.** $x=5;\ y=4.$

808. $x=3;\ y=2.$ **809.** $x=4;\ y=3.$

810. $x=5;\ y=2.$ **811.** $x=5;\ y=-2.$

812. $x=2;\ y=3.$ **813.** $x=-\frac{4695}{1155};\ y=\frac{5697}{1155}.$

814. $x=1;\ y=-\frac{1}{2}.$ **815.** $x=\frac{805}{54};\ y=\frac{104}{54}.$

816. $x=\frac{5060}{277277};\ y=-\frac{551504}{277277}.$

817. $x=\frac{171755}{7312};\ y=\frac{150155}{5756}$

818. $x=\frac{1131796}{649467};\ y=\frac{640575}{1298934}.$

819. $x=\frac{198}{19};\ y=-\frac{10}{19}.$

820. $x=-\frac{139700}{7445};\ y=-\frac{962}{7445}.$

821. $x=\frac{26161253}{77604592};\ y=\frac{26190891}{1552087840}.$

822. $x=1;\ y=0.$

823. $x=\frac{a^5+b^5}{a^4+b^4};\ y=\frac{a^3b^2-a^2b^3}{a^4+b^4}.$

824. $x=-\frac{b(a-b)(a^2-b^2)}{a^2+b^2};\ y=\frac{(a^2-b^2)(a^3+b^3)}{b(a^2+b^2)}.$

825. $x=\frac{(a^2-b^2)(5a^2-2ab+5b^2)}{2(a^4+6a^2b^2+b^4)};\ y=-\frac{(a^2-b^2)(a^2+6ab+b^2)}{2(a^4+6a^2b^2+b^4)}.$

826.
$$x=\frac{\left\{b^2(a-1)(a-b)(a+1)^2\left\{(a+b)^2-1\right\}\left\{(a-b)(a-1)-a\right\}^2+ab(a+b)(a+1)(a^2-1)\left\{(a-1)^2-b^2\right\}\left\{(a^2-b^2)(a^2-1)+a\left\{(a-b)(a-1)-(a+b)(a+1)\right\}-a^2\right\}\right\}}{\left\{ab(a+b)\left\{(a+1)^2\left\{(a+1)^2-b^2\right\}\left\{(a-b)(a-1)-a\right\}^2+(a-1)^2\times\left\{(a+b)(a+1)+a\right\}^2\left\{(a-1)^2-b^2\right\}\right\}\right\}};$$

$$y=\frac{\left\{b^2(a-1)^2(a-b)\left\{(a+b)^2-1\right\}\left\{(a+b)(a+1)+a\right\}^2-ab(a+b)(a+1)(a^2-1)\left\{(a^2-b^2)(a^2-1)+a\left\{(a-b)(a-1)-(a+b)(a+1)\right\}-a^2\left\{(a+1)^2-b^2\right\}\right\}\right\}}{\left\{ab(a+b)\left\{(a+1)^2\left\{(a+1)^2-b^2\right\}\left\{(a-b)(a-1)-a\right\}^2+(a-1)^2\times\left\{(a+b)(a+1)+a\right\}^2\left\{(a-1)^2-b^2\right\}\right\}\right\}}$$

827.
$$x=\frac{ab(a+1)^2(b-1)\left\{a^2(a-b)(b-1)^2-b^2(a+b)(a-1)^2\right\}}{(a-1)\left\{a^4(b-1)^4-b^4(a+1)^4\right\}};$$

$$y=-\frac{ab(b-1)\left\{a^2(a+b)(a-1)^2(b-1)^2-b^2(a-b)(a+1)^4\right\}}{(a-1)\left\{a^4(b-1)^4-b^4(a+1)^4\right\}}.$$

Sistemas determinados de tres ecuaciones.

828. $x=4{,}9;\ y=-0{,}5;\ z=-1{,}7.$

829. $x=7;\ y=-7;\ z=6.$

830. $x=3;\ y=2;\ z=-2.$

831. $x=\frac{6}{25};\ y=\frac{184}{25};\ z=-\frac{16}{25}.$

832. $x=\frac{96}{25};\ y=-\frac{12}{25};\ z=\frac{29}{25}.$

833. $x=2;\ y=-2;\ z=0{,}05.$

834. $x=3;\ y=2;\ z=\frac{2}{5}.$

835. $x=\frac{66}{13};\ y=\frac{606}{247};\ z=\frac{365}{247}.$

836. $x=2;\ y=3;\ z=4.$

837. $x=\frac{17637}{3001};\ y=\frac{714074}{14989995};\ z=-\frac{11708}{2997999}.$

838. $x=0{,}2;\ y=0{,}02;\ z=0{,}002.$

839. $x=4;\ y=-4;\ z=-3.$

840. $x=\frac{59}{5};\ y=\frac{18}{5};\ z=-\frac{22}{5}.$

841. Eliminando x entre la primera y segunda ecna-

cion, y entre la primera y tercera resultará el sistema

$$\left.\begin{array}{l} 5c\{9a^2-4b^2\}y+3b\{25a^2+4c^2\}z=15bc\{a^2-8\}. \\ 5b\{2c+3a\}y+9c^2z=15c\{4-3b\}. \end{array}\right\}(1).$$

Eliminando z entre estas dos, resultará

$$y=\frac{3bc\left\{3c^2(a^2-8)-(4-3b)(25a^2+4c^2)\right\}}{3c^3(9a^2-4b^2)-b^2(2c+3a)(25a^2+4c^2)};$$

y sustituyendo este valor en la segunda de las ecuaciones (1), se tendrá para z

$$z=\frac{\left\{5\left\{(4-3b)\left\{3c^3(9a^2-4b^2)-b^2(2c+3a)(25a^2+4c^2)\right\}-b^2(2c+3a)\left\{3c^2(a^2-8)-(4-3b)(25a^2+4c^2)\right\}\right\}\right\}}{3c\left\{3c^3(9a^2-4b^2)-b^2(2c+3a)(25a^2+4c^2)\right\}}.$$

Pònieudo estos valores de y y de z en la ecuacion

$$2bcx+3acy+5abz=abc,$$

que es el resultado de quitar los denominadores en la primera de las dadas, se hallará finalmente, despues de hechas todas las simplificaciones

$$x=\frac{\left\{3abc^2\left\{3c^3(9a^2-4b^2)-b^2(2c+3a)(25a^2+4c^2)\right\}-\left\{ab\left\{3c^2(a^2-8-(4-3b)(25a^2+4c^2)\right\}\left\{27c^3-25b^2(2c+3a)\right\}+25ab\left\{(4-3b)\left\{3c^3(9a^2-4b^2)-b^2(2c+3a)(25a^2+4c^2)\right\}\right\}\right\}\right\}}{6bc^2\left\{3c^3(9a^2-4b^2)-b^2(2c+3a)(25a^2+4c^2)\right\}}.$$

842. Quitando denominadores se convertiràn las ecuaciónes dadas en

$$a\{a-1\}\{a+b\}x+b\{a+1\}\{a+b\}y+a\{a^2$$

$$-1\}z=b\{a^2-1\}\{a+b\}.$$

$$b\{a-1\}x-a\{a-1\}y-b\{a-b\}z=a\{a-1\}\{a-b\}.$$

$$\{a+1\}\{a-b\}x-\{a+1\}\{a+b\}y-\{a^2-b^2\}z=\{a+1\}\{a^2-b^2\}.$$

Eliminando x entre primera y segunda, y entre primera y tercera, por el método de reduccion al mismo coeficiente, se tendrá el sistema

$$\{a+b\}\{b^2\{a+1\}+a^2\{a-1\}\}y+ab\{2a^2-b^2-1\}z=\{a-1\}\{a+b\}\{b^2\{a+1\}-a^2\{a-b\}\}.$$

$$\{a+1\}\{a+b\}\{b\{a+1\}\{a-b\}+a\{a-1\}\{a+b\}\}y+a\{a-1\}\{a-b\}\{\{a+1\}^2+\{a+b\}^2\}z=-\{a^2-1\}\{a^2-b^2\}\{a^2-b\},$$

en el cual eliminando y por el mismo método se hallará

$$z=\frac{\{(a^2-1)(a+b)\}\{b^2(a+1)-a^2(a-b)\}\{b(a+1)(a-b)+a(a-1)(a+b)\}+(a-b)(a^2-b)\}}{\{a\{b(a+1)(2a^2-b^2-1)\{b(a+1)(a-b)+a(a-1)(a+b)\}-(a-1)(a-b)\{b^2(a+1)+a^2(a-1)\}\{(a+1)^2+(a+b)^2\}\}}$$

y eliminando z en las mismas resultaría

$$y=\frac{\{(a-1)(a-b)\{(a-1)\{b^2(a+1)-a^2(a-b)\}\{(a+1)^2+(a+b)^2\}+b(a+1)(a^2-b)(2a^2-b^2-1)\}\}}{\{(a-1)(a-b)\{b^2(a+1)+a^2(a-1)\}\{(a+1)^2+(a+b)^2\}-b(a+1)\{b(a+1)(a-b)+a(a-1)(a+b)\}(2a^2-b^2-1)\}}$$

y sustituyendo estos valores en la primera de las ecuaciones que resultaron de quitar los denominadores á las dadas, se tendrá

$$x=\frac{b(a+1)}{a}+\frac{\begin{Bmatrix}(a^2-1)^2(a+b)\end{Bmatrix}\begin{Bmatrix}b^2(a+1)-a^2(a-b)\end{Bmatrix}\begin{Bmatrix}b(a+1)(a-b)\\+a(a-1)(a+b)\end{Bmatrix}+(a-b)(a^2-b)\end{Bmatrix}+b(a^2-1)\\(a^2-b^2)\begin{Bmatrix}(a-1)\begin{Bmatrix}b^2(a+1)-a^2(a-b)\end{Bmatrix}\begin{Bmatrix}(a+1)^2+\\(a+b)^2\end{Bmatrix}+b(a+1)(a^2-b)(2a^2-b^2-1)\end{Bmatrix}\end{Bmatrix}}{\begin{Bmatrix}(a-1)(a-b)\begin{Bmatrix}b^2(a+1)+a^2(a-1)\end{Bmatrix}\begin{Bmatrix}(a+1)^2+(a+b)^2\end{Bmatrix}\\-b(a+1)\begin{Bmatrix}b(a+1)(a-b)+a(a-1)(a+b)\end{Bmatrix}\begin{Bmatrix}(2a^2-b^2-1)\end{Bmatrix}\end{Bmatrix}}.$$

843. La eliminacion de x entre primera y segunda dá

$$\{a-1\}^2\{b+1\}^2-\{a+1\}^2\{b-1\}^2\}y+\{\{a^2+1\}\{b+1\}^2-\{a+1\}^2\{b^2+1\}\}z=\{a+1\}\{b+1\}\{\{a-1\}\{b+1\}-a\{a+1\}\{b-1\}\},$$

y la de x entre primera y tercera da

$$\{\{a-1\}^2\{c+1\}^2-\{a+1\}^2\{c-1\}^2\}y+\{\{a^2+1\}\{c+1\}^2-\{a+1\}^2\{c^2+1\}\}z=\{a+1\}\{c+1\}\}\{a-1\}\{c+1\}-b\{a+1\}\{c-1\}\};$$

y eliminando y entre estas, se obtiene

$$z=\frac{\begin{Bmatrix}(a+1)\begin{Bmatrix}(b+1)\begin{Bmatrix}(a-1)(b+1)-a(a+1)(b-1)\end{Bmatrix}\begin{Bmatrix}(a-1)^2(c+1)^2\\-(a+1)^2(c-1)^2\end{Bmatrix}-(c+1)\begin{Bmatrix}(a-1)^2(b+1)^2-(a+1)^2(b-1)^2\end{Bmatrix}\begin{Bmatrix}(a-1)(c+1)\\-b(a+1)(c-1)\end{Bmatrix}\end{Bmatrix}}{\begin{Bmatrix}\begin{Bmatrix}(a^2+1)(b+1)^2-(a+1)^2(b^2+1)\end{Bmatrix}\begin{Bmatrix}(a-1)^2(c+1)^2-(a+1)^2(c-1)^2\end{Bmatrix}\\-\begin{Bmatrix}(a-1)^2(b+1)^2-(a+1)^2(b-1)^2\end{Bmatrix}\begin{Bmatrix}(a^2+1)(c+1)^2-(a+1)^2(c^2+1)\end{Bmatrix}\end{Bmatrix}}.$$

Si en vez de eliminar y en las últimas ecuaciones se elimina z, resulta

$$y=-\frac{\Big\{(a+1)\Big\{(b+1)\Big\{(a-1)\ (b+1)-a(a+1)(b-1)\Big\}\Big\}(a^2+1)\ (c+1)^2 -(a+1)^2(c^2+1)\Big\}-(c+1)\Big\{(a-1)(c+1)-b(a+1)(c-1)\Big\}\Big\{(a^2+1)\ (b+1)^2-(a+1)^2(b^2+1)\Big\}\Big\}}{\Big\{\Big\{(a^2+1)(b+1)^2-(a+1)^2(b^2+1)\Big\}\Big\{(a-1)^2(c+1)^2-(a+1)^2 (c-1)^2\Big\}-\Big\{(a-1)^2(b+1)^2-(a+1)^2(b-1)^2\Big\}\Big\{(a^2+1)(c+1)^2- (a+1)^2(c^2+1)\Big\}\Big\}}.$$

y sustituyendo los valores de z é y en la primera de las ecuaciones que resultaron de quitar denominadores en las dadas se hallará finalmente

$$x=\frac{a-1}{a+1}+$$
$$\frac{\Big\{(a-1)^2(a+1)\Big\{(b+1)\Big\{(a-1)(b+1)-a(a+1)(b-1)\Big\}\Big\}(a^2+1)(c+1)^2 -(a+1)^2(c^2+1)\Big\}-(c+1)\Big\{(a-1)(c+1)-b(a+1)(c-1)\Big\}\Big\{(a^2+1)(b+1)^2-(a+1)^2(b^2+1)\Big\}\Big\}-(a^2+1)(a+1)\Big\{(b+1)\Big\{(a-1)(b+1)-a(a+1)(b-1)\Big\}\Big\{(a-1)^2(c+1)^2-(a+1)^2(c-1)^2\Big\}-(c+1)\Big\{(a-1)^2(b+1)^2-(a+1)^2(b-1)^2\Big\}\Big\{(a-1)(c+1)-b(a+1)(c-1)\Big\}\Big\}}{\Big\{\Big\{(a^2+1)(b+1)^2-(a+1)^2(b^2+1)\Big\}\Big\{(a-1)^2(c+1)^2-(a+1)^2(c-1)^2\Big\} -\Big\{(a-1)^2(b+1)^2-(a+1)^2(b-1)^2\Big\}\Big\{(a^2+1)(c+1)^2-(a+1)^2(c^2+1)\Big\}\Big\}}.$$

844. Eliminando z entre primera y segunda, y entre primera y tercera, resulta el sistema

$$4\{a-c\}\{1-ac\}\{b^2-1\}x+4\{b-c\}\{1-bc\}\{a^2-1\}y=a\{a^2-1\}\{b^2-1\}\{bc\{c-1\}^2-a\{c+1\}^2\};$$
$$2\{a-c\}\{b^2-1\}x+2\{b-c\}\{a^2-1\}y=b\{a^2-1\}\{b^2-1\}\{ac\{c^2+1\}-b\{c+1\}^2\};$$

en el cual

$$x=\frac{(a^2-1)\{2b(1-bc)\{ac(c^2+1)-b(c+1)^2\}-a\{bc(c-1)^2-a(c+1)^2\}\}}{4c(a-b)(a-c)};$$

$$y=\frac{(b^2-1)\{a\{bc(c-1)^2-a(c+1)^2\}-2b(1-ac)\{ac(c^2+1)-b(c+1)^2\}\}}{4c(a-b)(b-c)};$$

y sustituyendo estos valores en la primera de las ecuaciones que resultaron de quitar la forma fraccionaria á las primitivas, resultará

$$z=\frac{abc(c-1)}{c+1}-$$

$$\frac{\{(c-1)\{2b\{ac(c^2+1)-b(c+1)^2\}\{(a+1)^2(b-c)(1-bc)-(b+1)^2(a-c)(1-ac)\}-a\{bc(c-1)^2-a(c+1)^2\}\{(a+1)^2(b-c)-(b+1)^2(a-c)\}\}\}}{4c(c+1)(a-b)(a-c)(b-c)}.$$

Habiendo eliminado x entre primera y segunda y entre primera y tercera se hubiese llegado al sistema

$$4\{a-b\}\{ab-1\}\{c^2-1\}y+4\{a-c\}\{ac-1\}\{b^2-1\}z=a\{b^2-1\}\{c^2-1\}\{bc\{a-1\}^2-a\{a+1\}^2\}.$$

$$2\{a-b\}\{ab-1\}\{c^2-1\}y+2\{a-c\}\{ac-1\}\{b^2-1\}z=b\{b^2-1\}\{c^2-1\}\{ac\{a^2+1\}-b\{a+1\}^2\},$$

en que siendo el primer miembro de la primera el duplo del de la segunda, y no existiendo esta relacion entre los segundos miembros, demuestra que las propuestas son incompatibles. Aconsejo al calculador que simplifique los valores anteriormente halla-

dos para x, y, y z, y de los simplificados podrá sacar igual deduccion.

845. El resultado de la eliminacion de x entre primera y segunda y entre primera y tercera es

$$\{a-b\}\{a-b-\{a^2+b^2\}\{a+b\}\}y+\{a^2+b^2\}\{1-\{a+b\}^2\}z=\{a^2-b^2\}\{a-b^2\{a+b\}\}.$$

$$\{\{a^2+b^2\}^2-\{a-b\}^4\}y+4ab\{a^2+b^2\}z=\{a^2-b^2\}\{c^2\{a^2+b^2\}-a\{a-b\}^2\};$$

de donde salen

$$y=\frac{(a^2-b^2)\{4ab\{a-b^2(a+b)\}-\{1-(a+b)^2\}\{c^2(a^2+b^2)-a(a-b)^2\}\}}{4ab(a-b)\{a-b-(a^2+b^2)(a+b)\}-\{1-(a+b)^2\}\{(a^2+b^2)^2-(a-b)^4\}};$$

$$z=\frac{\{(a^2-b^2)\{\{a-b^2(a+b)\}\{(a^2+b^2)^2-(a-b)^4\}-(a-b)\{c^2(a^2+b^2)-a(a-b)^2\{\{a-b-(a^2+b^2)(a+b)\}\}\}\}}{\{(a^2+b^2)\{\{1-(a+b)^2\}\{(a^2+b^2)^2-(a-b)^4\}-4ab(a-b)\{a-b-(a^2+b^2)(a+b)\}\}\}}.$$

Habiendo eliminado z entre primera y segunda y entre primera y tercera, se hubiese hallado el sistema

$$\{a+b\}\{\{a+b\}^2-1\}x-2\{a-b\}b^2y=\{a^2-b^2\}\{a\{a+b\}-b^2\},$$

$$4ab\{a+b\}^2x-4a^2b^2y=\{a^2-b^2\}\{a\{a+b\}^2-c^2\{a^2+b^2\}\},$$

en el cual la eliminacion de y daria

$$x=\frac{(a-b)\left\{2a^2\left\{a(a+b)-b^2\right\}-(a-b)\left\{a(a+b)^2-c^2(a^2+b^2)\right\}\right\}}{2a\left\{a\left\{(a+b)^2-1\right\}-2b(a^2-b^2)\right\}}.$$

846. Despues de eliminar y entre primera y segunda y entre segunda y tercera de las ecuaciones propuestas, se llega al sistema

$$\{a+b\}\{a^2+b^2\}\{\{a+b\}\{a^2+b^2\}-\{a-b\}\}x+\{a+b\}^2\{a-b\}\{\{a-b\}\{a^2+b^2\}-1\}z=\{a+b\}\{a^2+b^2\}\{a\{a^2+b^2\}\{a-b\}-b\{a+b\}\};$$

$$\{a-b\}\{\{a^2+b^2\}-\{a-b\}\{a+b\}^2\}x+\{a+b\}\{\{a-b\}-\{a+b\}\{a^2+b^2\}\}z=\{a+b\}\{a^2+b^2\}\{2b-a\};$$

del cual se saca

$$x=\frac{\left\{(a^2+b^2)\left\{(a+b)(a-b)(2b-a)\left\{(a-b)(a^2+b^2)-1\right\}-\left\{a(a^2+b^2)(a-b)-b(a+b)\right\}\left\{a-b-(a+b)(a^2+b^2)\right\}\right\}\right\}}{\left\{(a-b)^2\left\{(a^2+b^2)-(a-b)(a+b)^2\right\}\left\{(a-b)(a^2+b^2)-1\right\}+(a^2+b^2)\left\{(a+b)(a^2+b^2)-(a-b)\right\}^2\right\}}\times$$

$$z=-\frac{\left\{(a^2+b^2)\left\{(a-b)\left\{a(a^2+b^2)(a-b)-b(a+b)\right\}\right\}\left\{(a^2+b^2)-(a-b)(a+b)^2\right\}-(a+b)(a^2+b^2)(2b-a)\left\{(a+b)(a^2+b^2)-(a-b)\right\}\right\}}{\left\{(a+b)\left\{(a-b)^2\left\{(a-b)(a^2+b^2)-1\right\}\left\{(a^2+b^2)-(a-b)(a+b)^2\right\}+(a^2+b^2)\left\{(a+b)(a^2+b^2)-(a-b)\right\}^2\right\}\right\}}.$$

La eliminacion de z entre primera y segunda y entre segunda y tercera de las propuestas da

$$\{a+b-\{a-b\}^2\}x+\{1-\{a-b\}\{a^2+b^2\}\}y$$
$$=\{a-b\}\{a-b\{a+b\}\};$$

$$\{a-b\}\{a+b\}\{a^2+b^2\}^2-\{a^2-b^2\}^2\}x+\{a^2$$
$$+b^2\}\{a+b\}\{a^2+b^2\}^2-\{a-b\}\}y=\{a+b\}\{a^2$$
$$+b^2\}\{b\{a+b\}\{a^2+b^2\}-\{a-b\}^2\};$$

y la de x entre estas dos

$$y=\frac{\{(a-b)^2\{a-b(a+b)\}\{(a+b)(a^2+b^2)^2-(a^2-b^2)^2\}-(a+b)(a^2+b^2)\{b(a+b)(a^2+b^2)-(a-b)^2\}\{a+b-(a-b)^2\}\}}{\{(a-b)\{1-(a-b)(a^2+b^2)\}\{(a+b)(a^2+b^2)^2-(a^2-b^2)^2\}-(a^2+b^2)\{(a+b)(a^2+b^2)^2-(a-b)\}\{a+b-(a-b)^2\}\}}$$

Sistemas determinados de cuatro ecuaciones

847. $x=7;\quad y=3;\quad z=2;\quad u=5.$

848. $x=4;\quad y=3;\quad z=2;\quad u=1.$

849. $x=1;\quad y=-1;\quad z=2;\quad u=-2.$

850. $x=1;\quad y=2;\quad z=-1;\quad u=-2.$

851. $x=-1;\quad y=0;\quad z=-\frac{3}{2};\quad u=\frac{25}{2}.$

852. $x=\frac{223}{127};\quad y=\frac{237}{127};\quad z=\frac{171}{127};\quad u=-\frac{47}{127}.$

853. $x=5;\quad y=2;\quad z=3;\quad u=4.$

854. $x=\frac{1}{2};\quad y=\frac{1}{3};\quad z=-\frac{1}{2};\quad u=-\frac{1}{3}.$

855. $x = 60; \quad y = 12; \quad z = 15; \quad u = 140,$

856. $x = 20; \quad y = 19; \quad z = 18; \quad u = 17.$

857. $x = \frac{1753406725}{175632178}; \quad y = -\frac{830808227}{87816089};$
$z = \frac{714638395}{87816089}; \quad u = -\frac{385395265}{87816089}.$

858. $x = \frac{26333933806}{1940885989}; \quad y = -\frac{35657508456}{9704419945};$
$z = -\frac{7900080650}{1940885989}; \quad u = -\frac{1295672818}{1940885989}.$

859. El sistema que resulta de eliminar u entre primera y segunda, entre primera y tercera, y entre la segunda y tercera es

$$\left.\begin{aligned} \{a^3+b^3\}x+\{a^2+b^2\}y+\{a+b\}z &= a^4+2b^4 \\ \{a^3+c^3\}x+\{a^2+c^2\}y+\{a-c\}z &= a^4+3c^4 \\ \{b^3-c^3\}x+\{b^2-c^2\}y+\{b+c\}z &= 2b^4-3c^4 \end{aligned}\right\} (1).$$

El que produce la eliminacion de z entre estas es

$$\{\{a^3+b^3\}\{a-c\}-\{a^3+c^3\}\{a+b\}\}x+\{\{a^2+b^2\}\{a-c\}-\{a^2+c^2\}\{a+b\}\}y=\{a^4+2b^4\}\{a-c\}-\{a^4+3c^4\}\{a+b\};$$

$$\{\{a^3+b^3\}\{b+c\}-\{b^3-c^3\}\{a+b\}\}x+\{\{a^2+b^2\}\{b+c\}-\{b^2-c^2\}\{a+b\}\}y=\{a^4+2b^4\}\{b+c\}-\{2b^4-3c^4\}\{a+b\},$$

en que

$$x=\frac{\{(a^2+b^2)\{(a-c)(2b^4-3c^4)-(a^4+3c^4)(b+c)\}+(a^4+2b^4)(b+c)\{a^2+c^2-(a-c)(b-c)\}+(a+b)\{(a^4+3c^4)(b^2-c^2)-(a^2+c^2)(2b^4-3c^4)\}\}}{\{(a^2+b^2)\{(a-c)(b^3-c^3)-(a^3+c^3)(b+c)\}+(a^3+b^3)(b+c)\{a^2+c^2-(a-c)(b-c)\}+(a+b)\{(a^3+c^3)(b^2-c^2)-(a^2+c^2)(b^3-c^3)\}\}};$$

$$y=\frac{\left\{(a^3+b^3)\left\{(a^4+3c^4)(b+c)-(a-c)(2b^4-3c^4)\right\}+(a^4+2b^4)\left\{(a-c)(b^3-c^3)-(a^3+c^3)(b+c)\right\}+(a+b)\left\{(a^3+c^3)(2b^4-3c^4)-(a^4+3c^4)(b^3-c^3)\right\}\right\}}{\left\{(a^2+b^2)\left\{(a-c)(b^3-c^3)-(a^3+c^3)(b+c)\right\}+(a^3+b^3)(b+c)\left\{a^2+c^2-(a-c)(b-c)\right\}+(a+b)\left\{(a^3+c^3)(b^2-c^2)-(a^2+c^2)(b^3-c^3)\right\}\right\}}.$$

La eliminacion de x entre primera y segunda y entre primera y tercera de las ecuaciones (1) da lugar al sistema

$$\{\{a^2+b^2\}\{a^3+c^3\}-\{a^3+b^3\}\{a^2+c^2\}\}y+\{\{a+b\}\{a^3+c^3\}-\{a^3+b^3\}\{a-c\}\}z=\{a^4+2b^4\}\{a^3+c^3\}-\{a^3+b^3\}\{a^4+3c^4\};$$

$$\{\{a^2+b^2\}\{b^3-c^3\}-\{a^3+b^3\}\{b^2-c^2\}\}y+\{\{a+b\}\{b^3-c^3\}-\{a^3+b^3\}\{b+c\}\}z=\{a^4+2b^4\}\{b^3-c^3\}-\{a^3+b^3\}\{2b^4-3c^4\};$$

en el cual eliminando y resulta el valor

$$z=\frac{\left\{(a^2+b^2)\left\{(a^4+3c^4)(b^3-c^3)-(a^3+c^3)(2b^4-3c^4)\right\}+(a^4+2b^4)\left\{(a^3+c^3)(b^2-c^2)-(a^2+c^2)(b^3-c^3)\right\}+(a^3+b^3)\left\{(a^2+c^2)(2b^4-3c^4)-(a^4+3c^4)(b^2-c^2)\right\}\right\}}{\left\{(a^2+b^2)\left\{(a-c)(b^3-c^3)-(a^3+c^3)(b+c)\right\}+(a^3+b^3)(b+c)\left\{a^2+c^2-(a-c)(b-c)\right\}+(a+b)\left\{(a^3+c^3)(b^2-c^2)-(a^2+c^2)(b^3-c^3)\right\}\right\}};$$

y sustituyendo estos valores de x, y y z en la ecuacion

$$bc^2x-ac^2y-abcz-abu=4abc^2,$$

que es la cuarta de las que resultan de qui-

tár los denominadores á las propuestas, se tendrà finalmente

$$u=\frac{\left\{a^3b^2c^2\left\{\left\{b(a-2b)(c-a)-c(b-a)(a-3c)\right\}\left\{c(b+a)(b+a^2)-b^2(c+a^3)\right\}\right.\right.}{\left.\left.-b^1(a-2b)(b+a^2)+3a(b-a)\right\}\left\{c(b+a)(c-a)-b(c^2+a^2)\right\}\right\}}$$
$$\frac{\left\{\left\{c^2(b^3+a^3)(c-a)-b^2(b-a)(c^3+a^3)\right\}\left\{c(b+a)(b+a^2)-b^2(c+a^3)\right\}\right.}{\left.-\left\{c^2(b^3+a^3)(b+a^2)-b^3(b-a)(c^2+a^4)\right\}\left\{c(b+a)(c-a)-b(c^2+a^2)\right\}\right\}}.$$

Este mismo valor hubiera resultado mas facil y brevemente habiendo eliminado x, y y z entre las cuatro euaciones propuestas.

$$\left\{(a^2+b^2)(a^2-1)\left\{(a^2+1)\left\{2a(b-1)(a-1)\left\{a-b(a^2-b^2)\right\}+(a+1)\left\{a(a-b)-\right.\right.\right.\right.$$
$$\left.\left.\left.\left.b^2(a-1)\right\}\left\{a-1-(a+b)^2\right\}\right\}\left\{(a-1)\left\{a^2+b^2-(a^2-b^2)(a+b)\right\}\right\}\left\{(a-b)\times\right.\right.$$
$$(a+1)-(a^2+b^2)(a+b)\Big\}-(a^2+b^2)(a+1)(a-b-a^2-b^2)(a-1-(a+b)^2)\Big\}$$
$$-\left\{(a-1)\left\{a-b(a+b)\right\}\right\}\left\{(a-b)(a+1)-(a^2+b^2)(a+b)\right\}-a(a+1)\left\{a-b\right.$$
$$\left.-a(a^2+b^2)\right\}\left\{a-1-(a+b)^2\right\}\Big\}\Big\{2a(a^2+1)(a-1)(b-1)\left\{a^2+b^2-\right.$$
$$\left.(a^2-b^2)(a+b)\right\}+(a^2+b^2)(a-b)(a+1)\left\{a^2+1-(a+b)(a-1)\right\}\left\{a-1\right.$$
$$\left.\left.\left.-(a+b)^2\right\}\right\}\right\}$$

860. $$x=\frac{\left\{(a^2+1)(a-1)\left\{2a(a-1)(b-1)\left\{a+1-(a^2+b^2)(a+b)\right\}-(a+1)\left\{a(b-1)\right.\right.\right.}{\left.\left.+b(b+1)\right\}\left\{a-1-(a+b)^2\right\}\right\}\left\{(a-1)\left\{a^2+b^2-(a^2-b^2)(a+b)\right\}\right\}\left\{(a\right.}$$
$$-b)(a+1)-(a^2+b^2)(a+b)\Big\}-(a^2+b^2)(a+1)(a-b-a^2-b^2)\Big\{a-1$$
$$-(a+b)^2\Big\}\Big\}-\Big\{(a-1)^2\Big\{a+1-(a^2+b^2)(a+b)\Big\}\Big\}\Big\{(a-b)(a+1)-$$
$$(a^2+b^2)(a+b)\Big\}-(a+1)^2\Big\{(a-b)(a-1)-(a^2+b^2)^2\Big\}\Big\{a-1-$$
$$(a+b)^2\Big\}\Big\}\Big\{2a(a^2+1)(a-1)(b-1)\Big\{a^2+b^2-(a^2-b^2)(a+b)\Big\}+(a^2+b^2)\times$$
$$(a-b)(a+1)\Big\{a^2+1-(a+b)(a-1)\Big\}\Big\{a-1-(a+b)^2\Big\}\Big\}\Big\};$$

$$\left\{(a^4-b^4)(a^2+1)\left\{(a-1)\left\{(a-1)\left\{a-b(a+b)\right\}\right\}(a-b)(a+1)-(a^2+b^2)\times\right.\right.$$
$$(a+b)\Big\}-a(a+1)\Big\{a-b-a(a^2+b^2)\Big\}\Big\{a-1-(a+b)^2\Big\}\Big\}\Big\}2a(a-1)\times$$
$$(b-1)\Big\{a+1-(a^2+b^2)(a+b)\Big\}-(a+1)\Big\{a(b-1)+b(b+1)\Big\}\Big\{a-1$$
$$-(a+b)^2\Big\}\Big\}-\Big\{2a(b-1)(a-1)\Big\{a-b(a^2-b^2)\Big\}+(a+1)\Big\{a(a-b)-b^2\times$$
$$(a-1)\Big\}\Big\{a-1-(a+b)^2\Big\}\Big\}\Big\}(a-1)^2\Big\{a+1-(a^2+b^2)(a+b)\Big\}\Big\{(a-b)(a+1)$$
$$\left.\left.-(a^2+b^2)(a+b)\Big\}-(a+1)^2\Big\{(a-b)(a-1)-(a^2+b^2)^2\Big\}\Big\{a-1-(a+b)^2\Big\}\Big\}\Big\}\right\}$$

$$y=\frac{}{\Big\{(a^2+1)(a-1)\Big\{(a-1)\Big\{a^2+b^2-(a^2-b^2)(a+b)\Big\}\Big\}(a-b)(a+1)-}$$
$$(a^2+b^2)(a+b)\Big\}-(a^2+b^2)(a+1)\Big\{a-b-(a^2+b^2)\Big\}\Big\{a-1-(a+b)^2\Big\}\Big\}\Big\}2a\times$$
$$(a-1)(b-1)\Big\{a+1-(a^2+b^2)(a+b)\Big\}-(a+1)\Big\{a(b-1)+b(b+1)\Big\}\Big\{a-1-$$
$$(a+b)^2\Big\}\Big\}-\Big\{2a(a^2+1)(a-1)(b-1)\Big\{a^2+b^2-(a^2-b^2)(a+b)\Big\}$$
$$+(a^2+b^2)(a-b)(a+1)\Big\{a^2+1-(a+b)(a-1)\Big\}\Big\{a-1-(a+b)^2\Big\}\Big\}\times$$
$$\Big\{(a-1)^2\Big\{a+1-(a^2+b^2)(a+b)\Big\}\Big\{(a-b)(a+1)-(a^2+b^2)(a+b)\Big\}-$$
$$(a+1)^2\Big\{(a-b)(a-1)-(a^2+b^2)^2\Big\}\Big\{a-1-(a+b)^2\Big\}\Big\}\Big\};$$

$$z=\Big\{\{a+b\}\{a^2-1\}\Big\}\{a+b\}\Big\}\Big\{2a^2\{a^2+b^2\}\{b^2+1\}\times$$
$$\Big\{a\{a^2+b^2\}-b\{a+1\}\Big\}-\{a^2+1\}\{a^2+b^2\}^2-$$
$$\{a^2-b^2\}\{a+1\}\Big\}\Big\}a\{a^2+b^2\}-b^2\times$$
$$\{a^2-1\}\Big\}\Big\}\Big\}2a^2\{b^2+1\}\Big\}\{a^2+b^2\}^2-\{a-b\}\{a-1\}\Big\}-$$
$$\{a^2+b^2\}\{a^2+1\}\Big\}\{a^2+b^2\}-\{a-1\}\Big\}\Big\}b\{b+1\}$$
$$+a\{b-1\}\Big\}\Big\}-\{a^2+b^2\}\Big\}2a^2\{a^2+b^2\}\{b^2+1\}\times$$
$$\Big\{\{a^2+b^2\}\{a+b\}-\{a+1\}\Big\}-\{a+b\}\{a^2+1\}\times$$
$$\Big\{\{a^2+b^2\}^2-\{a^2-b^2\}\{a+1\}\Big\}\Big\}b\{b+1\}+a\{b-1\}\Big\}\Big\}\times$$
$$\Big\{2a^3\{b^2+1\}\Big\}\{a^2+b^2\}-a\{a-1\}\Big\}-\{a^2+1\}\times$$

$$\{\{a^2+b^2\}-\{a-1\}\{\{a\{a^2+b^2\}-b^2\{a^2-1\}\}\}\}\Big\}\Big\{:$$

$$\Big\{\{a+b\}\{a+1\}\{2a^2\{a^2+b^2\}\{b^2+1\}\times$$
$$\{\{a^2+b^2\}\{a-1\}-\{a+b\}\{a+1\}\}-\{a^2+1\}\times$$
$$\{a-1\}\{\{a^2+b^2\}^2-\{a^2-b^2\}\{a+1\}\{\{b\{b+1\}-$$
$$a\{b-1\}\}\}\{2a^2\{b^2+1\}\{a^2+b^2\}^2-\{a-b\}\times$$
$$\{a-1\}\}-\{a^2+b^2\}\{a^2+1\}\}\{a^2+b^2\}-$$
$$\{a-1\}\{\{b\{b+1\}+a\{b-1\}\}\}-\{a^2+b^2\}\times$$
$$\{a-1\}\{2a^2\{a^2+b^2\}\{b^2+1\}\}\{a^2+b^2\}\{a+b\}-$$
$$\{a+1\}\}-\{a+b\}\{a^2+1\}\}\{a^2+b^2\}^2-\{a^2-b^2\}\times$$
$$\{a+1\}\}\{b\{b+1\}+a\{b-1\}\}\}\{2a^2\{b^2+1\}\}a^2+b^2\}\times$$
$$\{a+1\}-\{a+b\}\{a-1\}\}-\{a^2+1\}\{a+1\}\}\{a^2+b^2\}-$$
$$\{a-1\}\{\{b\{b+1\}-a\{b-1\}\}\}\Big\}\Big\}.$$

$$u=\{\{a^4-b^4\}\{a-1\}\{2a^2\{b^2+1\}\}\{a^2+b^2\}\{a+1\}-$$
$$\{a+b\}\{a-1\}\}-\{a^2+1\}\{a+1\}\}\{a^2+b^2\}-$$
$$\{a-1\}\{\{b\{b+1\}-a\{b-1\}\}\}\{2a^2\{a^2+b^2\}\times$$
$$\{b^2+1\}\{a\{a^2+b^2\}-b\{a+1\}\}-\{a^2+1\}\}\{a^2+b^2\}^2$$
$$-\{a^2-b^2\}\{a+1\}\}\{a\{a^2+b^2\}-b^2\{a^2-1\}\}\}-$$
$$\{a+1\}\{2a^2\{a^2+b^2\}\{b^2+1\}\}\{a^2+b^2\}\{a-1\}-$$
$$\{a+b\}\{a+1\}\}-\{a^2+1\}\{a-1\}\}\{a^2+b^2\}^2-$$
$$\{a^2-b^2\}\{a+1\}\}\{b\{b+1\}-a\{b-1\}\}\}\{2a^3\{b^2+1\}\times$$
$$\{\{a^2+b^2\}-a\{a-1\}\}-\{a^2+1\}\}\{a^2+b^2\}-$$
$$\{a-1\}\}\{a\{a^2+b^2\}-b^2\{a^2-1\}\}\}\Big\}\Big\}:\{\{a^2+b^2\}\times$$

$$\{a-1\}\{2a^2\{b^2+1\}\}\{a^2+b^2\}\{a+1\}-\{a+b\}\{a-1\}\}$$
$$-\{a^2+1\}\{a+1\}\}\{a^2+b^2\}-\{a-1\}\}\{b\{b+1\}$$
$$-a\{b-1\}\}\}\{2a^2\{a^2+b^2\}\{b^2+1\}\}\{a^2+b^2\}\{a+b\}$$
$$-\{a+1\}\}-\{a+b\}\{a^2+1\}\}\{a^2+b^2\}^2-$$
$$\{a^2-b^2\}\{a+1\}\}\{b\{b+1\}+a\{b-1\}\}\}-\{a+b\}\times$$
$$\{a+1\}\{2a^2\{a^2+b^2\}\{b^2+1\}\}\{a^2+b^2\}\{a-1\}-$$
$$\{a+b\}\{a+1\}\}-\{a^2+1\}\{a-1\}\}\{a^2+b^2\}^2-$$
$$\{a^2-b^2\}\{a+1\}\}\{b\{b+1\}-a\{b-1\}\}\}\{2a^2\{b^2+1\}$$
$$\{\{a^2+b^2\}^2-\{a-b\}\{a-1\}\}-\{a^2+b^2\}\{a^2+1\}$$
$$\{\{a^2+b^2\}-\{a-1\}\}\{b\{b+1\}+a\{b-1\}\}\}\}.$$

861. Las ecuaciones de este sistema son incompatibles, pues eliminando u entre primera y segunda, y entre tercera y cuarta, resulta

$$2x-2z=\{a-1\}\{b-1\};$$
$$2x-2z=-\{a-1\}\{b-1\}\{a+b\}.$$

862. La eliminacion de z y u entre las cuatro ecuaciones propuestas produce el sistema

$$b\{b^3+1\}\{a^2\{b^6-1\}\{a\{a^2+1\}^2\{b^2+1\}\{b^3+1\}-$$
$$b\{a^2-1\}\{a^3-1\}\{b^2-1\}^2\}\}\{a^3+1\}\{a+1\}\times$$
$$\{b^3+1\}\{b^2-1\}-\{a^2+1\}\{a^2+a+1\}\{b^2+1\}\times$$
$$\{b^3-1\}\}-\{b^4-1\}\}a^2\{a^2+1\}\{a+1\}\{b^6-1\}-$$
$$b^2\{a^3+1\}\{a^2+a+1\}\{b^4-1\}\}\{a\{a^3+1\}\times$$
$$\{a^2+1\}\{b^3+1\}^2-b\{a^3-1\}^2\{b^3-1\}\{b^2-1\}\}\}x$$
$$+b\{b^2-1\}\}a\{b^3+1\}^2\}a^2\{a^4-1\}\{b^6-1\}-$$

$$b^2\{a^6-1\}\{b^4-1\}\big\{\{a^3+1\}\{a+1\}\{b^3+1\}\{b^2-1\}$$
$$-\{a^2+1\}\{a^2+a+1\}\{b^2+1\}\{b^3-1\}\big\} -$$
$$\{a-1\}\{b^2-1\}\{b^3-1\}\big\{a^2\{a+1\}^2\{b^3+1\}^2-b^2\times$$
$$\{a^2+a+1\}^2\{b^2+1\}^2\big\}\big\{a\{a^3+1\}\{a^2+1\}\{b^3+1\}^2$$
$$-b\{a^3-1\}^2\{b^3-1\}\{b^2-1\}\big\}\big\}y=a^3\{b^2-1\}\times$$
$$\{b^6-1\}\big\{\{b^2+1\}\{b^3+1\}\big\}\big\{a^3\{a^2+1\}\{b^3+1\}-b^3\times$$
$$\{a^3-1\}\{b^2-1\}\big\{\{a^3+1\}\{a+1\}\{b^3+1\}\{b^2-1\}$$
$$-\{a^2+1\}\{a^2+a+1\}\{b^2+1\}\{b^3-1\}\big\}-a^2\times$$
$$\{b^4-1\}\big\{\{a+1\}\{b^3+1\}-b\{a^2+a+1\}\{b^2+1\}\big\}\big\}a\times$$
$$\{a^3+1\}\{a^2+1\}\{b^3+1\}^2-b\{a^3-1\}^2\{b^3-1\}\{b^2-1\}\big\}\big\};$$

$$b\{b^3-1\}\big\{a\{b^3+1\}^2\big\{a\{a^2+1\}^2\{b^2+1\}\{b^3+1\}$$
$$-b\{a^2-1\}\{a^3-1\}\{b^2-1\}^2\big\}\big\{b\{a^3+1\}^2\{b^3+1\}\times$$
$$\{b^2+1\}-a\{a^2-1\}\{a^3-1\}\{b^3-1\}^2\big\}-b\{b^2+1\}^2\times$$
$$\big\{a\{a^2+1\}\{a^3+1\}\{b^3+1\}^2-b\{a^3-1\}^2\{b^3-1\}\times$$
$$\{b^2-1\}\big\{\{a\{a^3+1\}\{a^2+1\}\{b^3+1\}^2-b\{a^3-1\}^2\times$$
$$\{b^3-1\}\{b^2-1\}\big\}\big\{x+b\{b^3+1\}\big\}\{b^2-1\}\{b^3+1\}\times$$
$$\big\{a^2\{a^4-1\}\{b^6-1\}-b^2\{a^6-1\}\{b^4-1\}\big\}\big\{b\{a^3+1\}^2\times$$
$$\{b^3+1\}\{b^2+1\}-a\{a^2-1\}\{a^3-1\}\{b^3-1\}^2\big\}$$
$$-ab\{b^2+1\}\{b^3-1\}\big\{\{a^2-1\}\{a^3+1\}\{b^2-1\}\times$$
$$\{b^3+1\}-\{a^2+1\}\{a^3-1\}\{b^2+1\}\{b^3-1\}\big\}\big\}a\times$$
$$\{a^3+1\}\{a^2+1\}\{b^3+1\}^2-b\{a^3-1\}^2\{b^3-1\}\times$$
$$\{b^2-1\}\big\}y=a^2\{b^4-1\}\{b^6-1\}\big\{\{b^3+1\}\big\}\{a^3\times$$
$$\{a^2+1\}\{b^3+1\}-b^3\{a^3-1\}\{b^2-1\}\big\}\big\{b\{a^3+1\}^2\times$$
$$\{b^3+1\}\{b^2+1\}-a\{a^2-1\}\{a^3-1\}\{b^3-1\}^2\big\} -$$

$$b\{b^2+1\}\{a^2\{a^3+1\}\{b^3+1\}-b^3\{a^3-1\}\times$$
$$\{b^3-1\}\{a\{a^3+1\}\{a^2+1\}\{b^3+1\}^2-b\{a^3-1\}^2\times$$
$$\{b^3-1\}\{b^2-1\}\};$$

del que resultan los valores

$$x=\{a^2\{b^2-1\}\{b^6-1\}\{a\{b^3+1\}\{b^2+1\}\times$$
$$\{b^3+1\}\{a^3\{a^2+1\}\{b^3+1\}-b^3\{a^3-1\}\{b^2-1\}\times$$
$$\{a^3+1\}\{a+1\}\{b^3+1\}\{b^2-1\}-\{a^2+1\}\{a^2+a$$
$$+1\}\{b^2+1\}\{b^3-1\}\}-a^2\{b^4-1\}\times$$
$$\{\{a+1\}\{b^3+1\}-b\{a^2+a+1\}\{b^2+1\}\}\{a\{a^3+1\}\times$$
$$\{a^2+1\}\{b^3+1\}^2-b\{a^3-1\}^2\{b^3-1\}\{b^2-1\}\}\times$$
$$\{\{b^2-1\}\{b^3+1\}\}a^2\{a^4-1\}\{b^6-1\}-b^2\{a^6-1\}\times$$
$$\{b^4-1\}\{\{b\{a^3+1\}^2\{b^3+1\}\{b^2+1\}-a\{a^2-1\}\times$$
$$\{a^3-1\}\{b^3-1\}^2\}-ab\{b^2+1\}\{b^3-1\}\{a^2-1\}\times$$
$$\{a^3+1\}\{b^2-1\}\{b^3+1\}-\{a^2+1\}\{a^3-1\}\{b^2+1\}\times$$
$$\{b^3-1\}\{\{a\{a^3+1\}\{a^2+1\}\{b^3+1\}^2-b\{a^3-1\}^2\times$$
$$\{b^3-1\}\{b^2-1\}\}-\{b^4-1\}\{b^3+1\}\{a^3\{a^2+1\}\times$$
$$\{b^3+1\}-b^3\{a^3-1\}\{b^2-1\}\{b\{a^3+1\}^2\{b^3+1\}\times$$
$$\{b^2+1\}-a\{a^2-1\}\{a^3-1\}\{b^3-1\}^2\}-b\{b^2+1\}\times$$
$$\{a^2\{a^3+1\}\{b^3+1\}-b^3\{a^3-1\}\{b^3-1\}\{a\{a^3+1\}\times$$
$$\{a^2+1\}\{b^3+1\}^2-b\{a^3-1\}^2\{b^3-1\}\times$$
$$b^2-1\}\}\{a\{b^3+1\}^2\{a^2\{a^4-1\}\{b^6-1\}-b^2\{a^6-1\}\times$$
$$\{b^4-1\}\}\{a^3+1\}\{a+1\}\{b^3+1\}\{b^2-1\}$$
$$-\{a^2+1\}\{a^2+a+1\}\{b^2+1\}\{b^3-1\}\}-\{a-1\}\times$$
$$\{b^2-1\}\{b^3-1\}\}a^2\{a+1\}^2\{b^3+1\}^2-b^2\times$$

$$\{a^2+a+1\}^2\{b^2+1\}^2\Big\{\Big\{a\{a^3+1\}\{a^2+1\}\{b^3+1\}^2-$$
$$b\{a^3-1\}^2\{b^3-1\}\{b^2-1\}\Big\}\Big\}\Big\{:\Big\}b\Big\{\{b^3+1\}^2\Big\}a^2\times$$
$$\{b^6-1\}\Big\{a\{a^2+1\}^2\{b^2+1\}\{b^3+1\}-b\{a^2-1\}\times$$
$$\{a^3-1\}\{b^2-1\}^2\Big\}\Big\{\{a^3+1\}\{a+1\}\{b^3+1\}\{b^2-1\}$$
$$-\{a^2+1\}\{a^2+a+1\}\{b^2+1\}\{b^3-1\}\Big\}-\{b^4-1\}\{a^2\{a^2+1\}\times$$
$$\{a+1\}\{b^6-1\}-b^2\{a^3+1\}\{a^2+a+1\}\{b^4-1\}\Big\}\times$$
$$\Big\{a\{a^3+1\}\{a^2+1\}\{b^3+1\}^2-b\{a^3-1\}^2\{b^3-1\}\times$$
$$\{b^2-1\}\Big\}\Big\}\Big\}\{b^2-1\}\{b^3+1\}\Big\}a^2\{a^4-1\}\{b^6-1\}$$
$$-b^2\{a^6-1\}\{b^4-1\}\Big\}\Big\}b\{a^3+1\}^2\{b^3+1\}\{b^2+1\}$$
$$-a\{a^2-1\}\{a^3-1\}\{b^3-1\}^2\Big\}-ab\{b^2+1\}\{b^3-1\}\times$$
$$\Big\{\{a^2-1\}\{a^3+1\}\{b^2-1\}\{b^3+1\}-\{a^2+1\}\{a^3-1\}\times$$
$$\{b^2+1\}\{b^3-1\}\Big\}\Big\{a\{a^3+1\}\{a^2+1\}\{b^3+1\}^2$$
$$-b\{a^3-1\}^2\{b^3-1\}\{b^2-1\}\Big\}\Big\}-\{b^2-1\}\{b^3-1\}\times$$
$$\Big\{a\{b^3+1\}^2\Big\{a\{a^2+1\}^2\{b^2+1\}\{b^3+1\}-b\{a^2-1\}\times$$
$$\{a^3-1\}\{b^2-1\}^2\Big\}\Big\{b\{a^3+1\}^2\{b^3+1\}\{b^2+1\}$$
$$-a\{a^2-1\}\{a^3-1\}\{b^3-1\}^2\Big\}-b\{b^2+1\}^2\Big\{a\{a^2+1\}\times$$
$$\{a^3+1\}\{b^3+1\}^2-b\{a^3-1\}^2\{b^3-1\}\{b^2-1\}\Big\}\times$$
$$\Big\{a\{a^3+1\}\{a^2+1\}\{b^3+1\}^2-b\{a^3-1\}^2\{b^3-1\}\times$$
$$\{b^2-1\}\Big\}\Big\}\Big\}a\{b^3+1\}^2\Big\}a^2\{a^4-1\}\{b^6-1\}$$
$$-b^2\{a^6-1\}\{b^4-1\}\Big\}\Big\}\{a^3+1\}\{a+1\}\{b^3+1\}\{b^2-1\}$$
$$-\{a^2+1\}\{a^2+a+1\}\{b^2+1\}\{b^3-1\}\Big\}$$
$$-\{a-1\}\{b^2-1\}\{b^3-1\}\Big\}a^2\{a+1\}^2\{b^3+1\}^2$$

$$-b^2(a^2+a+1)^2(b^2+1)^2\Big\{a(a^3+1)(a^2+1)\times$$
$$(b^3+1)^2-b(a^3-1)^2(b^3-1)(b^2-1)\Big\}\Big\}\Big\}.$$

$$y=\Big\{a^2(b^2-1)(b^6-1)\Big\}\Big\{a(b^3-1)\Big\}\Big\{(b^2+1)(b^3+1)\times$$
$$\Big\{a^3(a^2+1)(b^3+1)-b^3(a^3-1)(b^2-1)\Big\}\Big\}(a^3+1)\times$$
$$(a+1)(b^3+1)(b^2-1)-(a^2+1)(a^2+a+1)\times$$
$$(b^2+1)(b^3-1)\Big\}-a^2(b^4-1)\Big\}\Big\{a+1)(b^3+1)$$
$$-b(a^2+a+1)(b^2+1)\Big\}\Big\{a(a^3+1)(a^2+1)(b^3+1)^2$$
$$-b(a^3-1)^2(b^3-1)(b^2-1)\Big\}\Big\}\Big\}a(b^3+1)^2\times$$
$$\Big\{a(a^2+1)^2(b^2+1)(b^3+1)-b(a^2-1)(a^3-1)\times$$
$$(b^2-1)^2\Big\}\Big\{b(a^3+1)^2(b^3+1)^2-b(a^3-1)^2(b^3-1)\times$$
$$(b^2-1)\Big\}\Big\{a(a^3+1)(a^2+1)(b^3+1)^2-b(a^3-1)^2\times$$
$$(b^3-1)(b^2-1)\Big\}\Big\}-(b^2+1)(b^3+1)\Big\}(b^3+1)\Big\}a^3(a^2+1)\times$$
$$(b^3+1)-b^3(a^3-1)\Big\}(b^2-1)\Big\}\Big\}b(a^3+1)^2(b^3+1)\times$$
$$(b^2+1)-a(a^2-1)(a^3-1)(b^3-1)^2-b(b^2+1)\times$$
$$\Big\{a^2(a^3+1)(b^3+1)-b^3(a^3-1)(b^3-1)\Big\}\times$$
$$\Big\{a(a^3+1)(a^2+1)(b^3+1)^2-b(a^3-1)^2(b^3-1)\times$$
$$(b^2-1)\Big\}\Big\}\Big\}a^2(b^6-1)\Big\}a(a^2+1)^2(b^2+1)(b^3+1)$$
$$-b(a^2-1)(a^3-1)(b^2-1)^2\Big\}\Big\}(a^3+1)(a+1)\times$$
$$(b^3+1)(b^2-1)-(a^2+1)(a^2+a+1)(b^2+1)\times$$
$$(b^3-1)\Big\}-(b^4-1)\Big\}a^2(a^2+1)(a+1)(b^6-1)$$
$$-b^2(a^3+1)(a^2+a+1)(b^4-1)\Big\}\Big\}a(a^3+1)\times$$

$$\{a^2+1\}\{b^3+1\}^2-b\{a^3-1\}^2\{b^3-1\}\{b^2-1\}\}\}\Big\}:$$

$$\Big\{b\{b^2-1\}\{b^3-1\}\{a\{b^3+1\}^2\{a^2\{a^4-1\}\{b^6-1\}$$
$$-b^2\{a^6-1\}\{b^4-1\}\}\}\{a^3+1\}\{a+1\}\{b^3+1\}\times$$
$$\{b^2-1\}-\{a^2+1\}\{a^2+a+1\}\{b^2+1\}\{b^3-1\}\}$$
$$-\{a-1\}\{b^2-1\}\{b^3-1\}\{a^2\{a+1\}^2\{b^3+1\}^2$$
$$-b^2\{a^2+a+1\}^2\{b^2+1\}^2\}\}a\{a^3+1\}\{a^2+1\}\times$$
$$\{b^3+1\}^2-b\{a^3-1\}^2\{b^3-1\}\{b^2-1\}\}\}\}\{a\{b^3+1\}^2\times$$
$$\{a\{a^2+1\}^2\{b^2+1\}\{b^3+1\}-b\{a^2-1\}\{a^3-1\}\times$$
$$\{b^2-1\}^2\}\{b\{a^3+1\}^2\{b^3+1\}\{b^2+1\}-a\{a^2-1\}\times$$
$$\{a^3-1\}\{b^3-1\}^2\}-b\{b^2+1\}^2\{a\{a^2+1\}\{a^3+1\}\times$$
$$\{b^3+1\}^2-b\{a^3-1\}^2\{b^3-1\}\{b^2-1\}\}\}a\{a^3+1\}\times$$
$$\{a^2+1\}\{b^3+1\}^2-b\{a^3-1\}^2\{b^3-1\}\{b^2-1\}\}\}$$
$$-\{b^3+1\}^2\}\{b^2-1\}\{b^3+1\}\{a^2\{a^4-1\}\{b^6-1\}$$
$$-b^2\{a^6-1\}\{b^4-1\}\}\{b\{a^3+1\}^2\{b^3+1\}\{b^2+1\}$$
$$-a\{a^2-1\}\{a^3-1\}\{b^3-1\}^2\}-ab\{b^2+1\}\times$$
$$\{b^3-1\}\}\{a^2-1\}\{a^3+1\}\{b^2-1\}\{b^3+1\}$$
$$-\{a^2+1\}\{a^3-1\}\{b^2+1\}\{b^3-1\}\}\}a\{a^3+1\}\times$$
$$\{a^2+1\}\{b^3+1\}^2-b\{a^3-1\}^2\{b^3-1\}\{b^2-1\}\}\Big\}\times$$
$$\{a^2\{b^6-1\}\{a\{a^2+1\}^2\{b^2+1\}\{b^3+1\}-b\{a^2-1\}\times$$
$$\{a^3-1\}\{b^2-1\}^2\}\{a^3+1\}\{a+1\}\{b^3+1\}\{b^2-1\}$$
$$-\{a^2+1\}\{a^2+a+1\}\{b^2+1\}\{b^3-1\}\}$$
$$-\{b^4-1\}\}a^2\{a^2+1\}\{a+1\}\{b^6-1\}-b^2\{a^3+1\}\times$$

$$\{a^2+a+1\}\{b^4-1\}\Big\{a\{a^3+1\}\{a^2+1\}\{b^3+1\}^2 - b\{a^3-1\}^2\{b^3-1\}\{b^2-1\}\Big\}\Big\}.$$

Eliminando entre las mismas cuatro ecuaciones propuestas las incognitas x é y, se llega al sistema

$$\begin{aligned}
&b\{b^2+1\}\{ab^2\{a-1\}^2\{b^3-1\}\{b^2-1\}\}\{a+1\}\times\\
&\{a^3+1\}\{b+1\}\{b^3+1\}-\{a^2+1\}\{a^2+a+1\}\times\\
&\{b^2+1\}\{b^2+b+1\}\}^2-\{b^3+1\}^2\{b^2\{a^3+1\}^2\{b+1\}^2\\
&-a^2\{a^2+1\}^2\{b^2+b+1\}^2\}\{a\{a^2-1\}^2\{b^2-1\}\times\\
&\{b^3-1\}-b\{a^2+1\}\{\{a^3+1\}\{b^2+1\}^2\}\{z+b\{a-1\}\times\\
&\{b^3-1\}\}\{ab\{b^2+1\}\{b^2+b+1\}\}\{b\{a+1\}^2\{a-1\}\times\\
&\{a^6-1\}\{b-1\}^2\{b+1\}^3\{b^3+1\}-a\{a+1\}\{a^2+1\}^2\times\\
&\{a^3+1\}\{b+1\}\{b^2+1\}\{b^3+1\}^2-b\{a+1\}\times\\
&\{a^2+1\}\{a^3-1\}^2\{b+1\}\{b^3-1\}\{b^4-1\}\\
&+a\{a^2+1\}^3\{a^2+a+1\}\{b^2+1\}^2\{b^2+b+1\}\times\\
&\{b^3+1\}\}-\{b+1\}\{b^3+1\}\}\{ab^2\{a+1\}^2\{a-1\}\times\\
&\{a^6-1\}\{b+1\}\{b^3-1\}\{b^4-1\}-a^3\{a+1\}^3\times\\
&\{a^2+1\}\{a-1\}^2\{b+1\}\{b^3-1\}^2\{b^3+1\}\\
&-b^3\{a^2+1\}\{a^2+a+1\}\{a^3+1\}^2\{b+1\}\{b^2+1\}^3\\
&+a^2b\{a+1\}\{a^2+1\}^2\{a^3+1\}\{b^2+b+1\}\{b^2+1\}^2\times\\
&\{b^3+1\}\}\}u=a^3\{b+1\}\{b^2+1\}\{b^6-1\}\}\{b\{a-1\}\times\\
&\{b^3-1\}\}\{a^2\{a^2-1\}\}\{b^2-1\}-b^2\{a^2+1\}\{b^2+1\}\}\times\\
&\{\{a+1\}\{a^3+1\}\{b+1\}\{b^3+1\}-\{a^2+1\}\{a^2\\
&+a+1\}\{b^2+1\}\{b^2+b+1\}\}-a\{b^3+1\}\{b\{a^3+1\}\times\\
&\{b+1\}-a^2\{a^2+1\}\{b^2+b+1\}\}\{a\{a^2-1\}^2\times
\end{aligned}$$

$$\{b^2-1\}\{b^3-1\}-b\{a^2+1\}\{a^3+1\}\times\{b^2+1\}^2\},$$

$$b\{a-1\}\{b+1\}\{ab\{b^2+1\}\{b^3-1\}\{a+1\}\{a^3+1\}\times\{b+1\}\{b^3+1\}-\{a^2+1\}\{a^2+a+1\}\{b^2+1\}\times\{b^2+b+1\}\{b\{a^2-1\}\{a^3-1\}\{b^2-1\}^2-a\{a^2+1\}^2\{b^2+1\}\{b^3+1\}-\{b^2-1\}\{b^3+1\}\times\{b^2\{a^2+a+1\}\{a^3+1\}\{b^2+1\}\{b+1\}-a^2\{a+1\}\times\{a^2+1\}\{b^2+b+1\}\{b^3+1\}\{a\{a^2-1\}^2\times\{b^2-1\}\{b^3-1\}-b\{a^2+1\}\{a^3+1\}\{b^2+1\}^2\}z+b\{b^2+1\}\{a\{b^2+b+1\}^2\{b\{a^2-1\}\{a^3-1\}\times\{b^2-1\}^2-a\{a^2+1\}^2\{b^2+1\}\{b^3+1\}^2-b\{b+1\}^2\times\{b\{a^3-1\}^2\{b^3-1\}\{b^2-1\}-a\{a^2+1\}\{a^3+1\}\times\{b^3+1\}^2\}\{a\{a^2-1\}^2\{b^2-1\}\{b^3-1\}-b\{a^2+1\}\times\{a^3+1\}\{b^2+1\}^2\}\}u=a^3\{b+1\}\{b^2+1\}\{b^6-1\}\times\{b^2+b+1\}\{a^2\{a^2-1\}\{b^2-1\}-b^2\{a^2+1\}\times\{b^2+1\}\{b\{a^2-1\}\{a^3-1\}\{b^2-1\}^2-a\{a^2+1\}^2\times\{b^2+1\}\{b^3+1\}\}-b\{b+1\}\{a\{a^3-1\}\{b^2-1\}-b^2\{a^2+1\}\{b^3+1\}\{a\{a^2-1\}^2\{b^2-1\}\times\{b^3-1\}-b\{a^2+1\}\{a^3+1\}\{b^2+1\}^2\}\},$$

del cual salen

$$z=\{a^3\{b+1\}\{b^2+1\}\{b^6-1\}\{b^2+1\}\{b\{a-1\}\{b^3-1\}\times\{a^2\{a^2-1\}\{b^2-1\}-b^2\{a^2+1\}\{b^2+1\}\}\{a+1\}\times\{a^3+1\}\{b+1\}\{b^3+1\}-\{a^2+1\}\{a^2+a+1\}\times\{b^2+1\}\{b^2+b+1\}-a\{b^3+1\}\{b\{a^3+1\}\{b+1\}-$$

$$a^2\{a^2+1\}\{b^2+b+1\}\}\}a\{a^2-1\}^2\{b^2-1\}\times$$
$$\{b^3-1\}-b\{a^2+1\}\{a^3+1\}\{b^2+1\}^2\}\}\}a\times$$
$$\{b^2+b+1\}^2\}b\{a^2-1\}\{a^3-1\}\{b^2-1\}^2-a\{a^2+1\}^2\times$$
$$\{b^2+1\}\{b^3+1\}\}^2-b\{b+1\}^2\}b\{a^3-1\}^2\{b^3-1\}\times$$
$$\{b^2-1\}-a\{a^2+1\}\{a^3+1\}\{b^3+1\}^2\}\}a\{a^2-1\}^2\times$$
$$\{b^2-1\}\{b^3-1\}-b\{a^2+1\}\{a^3+1\}\{b^2+1\}^2\}\}$$
$$-\{a-1\}\{b^3-1\}\}\{b^2+b+1\}\}a^2\{a^2-1\}\times$$
$$\{b^2-1\}-b^2\{a^2+1\}\{b^2+1\}\}\}b\{a^2-1\}\{a^3-1\}\times$$
$$\{b^2-1\}^2-a\{a^2+1\}^2\{b^2+1\}\{b^3+1\}\}-b\{b+1\}\times$$
$$\}a\{a^3-1\}\{b^2-1\}-b^2\{a^2+1\}\{b^3+1\}\}\}a\{a^2-1\}^2\times$$
$$\{b^2-1\}\{b^3-1\}-b\{a^2+1\}\{a^3+1\}\{b^2+1\}^2\}\}\times$$
$$\}ab\{b^2+1\}\{b^2+b+1\}\}b\{a+1\}^2\{a-1\}\{a^6-1\}\times$$
$$\{b-1\}^2\{b+1\}^3\{b^3+1\}-a\{a+1\}\{a^2+1\}^2\times$$
$$\{a^3+1\}\{b+1\}\{b^2+1\}\{b^3+1\}^2-b\{a+1\}\times$$
$$\{a^2+1\}\{a^3-1\}^2\{b+1\}\{b^3-1\}\{b^4-1\}$$
$$+a\{a^2+1\}^3\{a^2+a+1\}\{b^2+1\}^2\{b^2+b+1\}\times$$
$$\{b^3+1\}-\{b+1\}\{b^3+1\}\}ab^2\{a+1\}^2\{a-1\}\{a^6-1\}\times$$
$$\{b+1\}\{b^3-1\}\{b^4-1\}-a^3\{a+1\}^3\{a^2+1\}\times$$
$$\{a-1\}^2\{b+1\}\{b^3-1\}^2\{b^3+1\}-b^3\{a^2+1\}\times$$
$$\{a^2+a+1\}\{a^3+1\}^2\{b+1\}\{b^2+1\}^3+a^2b\{a+1\}\times$$
$$\{a^2+1\}^2\{a^3+1\}\{b^2+b+1\}\{b^2+1\}^2\times$$
$$\{b^3+1\}\}\}\}\}:b\{\{b^2+1\}^2\}ab^2\{a-1\}^2\{b^3-1\}\times$$
$$\{b^2-1\}\}\{a+1\}\{a^3+1\}\{b+1\}\{b^3+1\}-\{a^2+1\}\times$$
$$\{a^2+a+1\}\{b^2+1\}\{b^2+b+1\}\}^2-\{b^3+1\}^2\times$$
$$\}b^2\{a^3+1\}^2\{b+1\}^2-a^2\{a^2+1\}^2\{b^2+b+1\}^2\}\times$$

$$\{a\{a^2-1\}^2\{b^2-1\}\{b^3-1\}-b\{a^2+1\}\{a^3+1\}\times$$
$$\{b^2+1\}^2\}\}\{a\{b^2+b+1\}^2\{b\{a^2-1\}\{a^3-1\}\{b^2-1\}^2$$
$$-a\{a^2+1\}^2\{b^2+1\}\{b^3+1\}\}^2-b\{b+1\}^2\{b\times$$
$$\{a^3-1\}^2\{b^3-1\}\{b^2-1\}-a\{a^2+1\}\{a^3+1\}\times$$
$$\{b^3+1\}^2\}\{a\{a^2-1\}^2\{b^2-1\}\{b^3-1\}-b\{a^2+1\}\times$$
$$\{a^3+1\}\{b^2+1\}^2\}\}-\{a-1\}^2\{b+1\}\{b^3-1\}\{ab\times$$
$$\{b^2+1\}\{b^3-1\}\}\{a+1\}\{a^3+1\}\{b+1\}\{b^3+1\}-$$
$$\{a^2+1\}\{a^2+a+1\}\{b^2+1\}\{b^2+b+1\}\}\{b\{a^2-1\}\times$$
$$\{a^3-1\}\{b^2-1\}^2-a\{a^2+1\}^2\{b^2+1\}\{b^3+1\}\}-$$
$$\{b^2-1\}\{b^3+1\}\}b^2\{a^2+a+1\}\{a^3+1\}\{b^2+1\}\times$$
$$\{b+1\}-a^2\{a+1\}\{a^2+1\}\{b^2+b+1\}\{b^3+1\}\}\times$$
$$\{a\{a^2-1\}^2\{b^2-1\}\{b^3-1\}-b\{a^2+1\}\{a^3+1\}\times$$
$$\{b^2+1\}^2\}\}\{ab\{b^2+1\}\{b^2+b+1\}\{b\{a+1\}^2\{a-1\}\times$$
$$\{a^6-1\}\{b-1\}^2\{b+1\}^3\{b^3+1\}-a\{a+1\}\times$$
$$\{a^2+1\}^2\{a^3+1\}\{b+1\}\{b^2+1\}\{b^3+1\}^2-b\{a+1\}\times$$
$$\{a^2+1\}\{a^3-1\}^2\{b+1\}\{b^3-1\}\{b^4-1\}+$$
$$a\{a^2+1\}^3\{a^2+a+1\}\{b^2+1\}^2\{b^2+b+1\}\times$$
$$\{b^3+1\}\}-\{b+1\}\{b^3+1\}\{ab^2\{a+1\}^2\{a-1\}\times$$
$$\{a^6-1\}\{b+1\}\{b^3-1\}\{b^4-1\}-a^3\{a+1\}^3\{a^2+1\}\times$$
$$\{a-1\}^2\{b+1\}\{b^3-1\}^2\{b^3+1\}-b^3\{a^2+1\}\{a^2+a$$
$$+1\}\{a^3+1\}^2\{b+1\}\{b^2+1\}^3+a^2b\{a+1\}\times$$
$$\{a^2+1\}^2\{a^3+1\}\{b^2+b+1\}\{b^2+1\}^2\{b^3+1\}\}\}\Big\}\ .$$

$$u=a^3\{b+1\}\{b^2+1\}\{b^6-1\}\{a-1\}\{b+1\}\{b\{a-1\}\times$$
$$\{b^3-1\}\{a^2\{a^2-1\}\{b^2-1\}-b^2\{a^2+1\}\{b^2+1\}\}\times$$
$$\{\{a+1\}\{a^3+1\}\{b+1\}\{b^3+1\}-\{a^2+1\}\{a^2+$$

$$a+1\{b^2+1\{b^2+b+1\}-a\{b^3+1\}b\{a^3+1\}\times$$
$$\{b+1\}-a^2\{a^2+1\}\{b^2+b+1\}\}a\{a^2-1\}^2\times$$
$$\{b^2-1\}\{b^3-1\}-b\{a^2+1\}\{a^3+1\}\{b^2+1\}^2\}\times$$
$$\}ab\{b^2+1\}\{b^3-1\}\}\{a+1\}\{a^3+1\}\{b+1\}\times$$
$$\{b^3+1\}-\{a^2+1\}\{a^2+a+1\}\{b^2+1\}\{b^2+b+1\}\}\times$$
$$\}b\{a^2-1\}\{a^3-1\}\{b^2-1\}^2-a\{a^2+1\}^2\{b^2+1\}\times$$
$$\{b^3+1\}\}-\{b^2-1\}\{b^3+1\}\}b^2\{a^2+a+1\}\{a^3+1\}\times$$
$$\{b^2+1\}\{b+1\}-a^2\{a+1\}\{a^2+1\}\{b^2+b+1\}\times$$
$$\{b^3+1\}\}a\{a^2-1\}^2\{b^2-1\}\{b^3-1\}-b\{a^2+1\}\times$$
$$\{a^3+1\}\{b^2+1\}^2\}-\{b^2+1\}\}\{b^2+b+1\}\times$$
$$\}a^2\{a^2-1\}\{b^2-1\}-b^2\{a^2+1\}\{b^2+1\}\}b\{a^2-1\}\times$$
$$\{a^3-1\}\{b^2-1\}^2-a\{a^2+1\}^2\{b^2+1\}\{b^3+1\}\}$$
$$-b\{b+1\}\}a\{a^3-1\}\{b^2-1\}-b^2\{a^2+1\}\{b^3+1\}\}\times$$
$$\}a\{a^2-1\}^2\{b^2-1\}\{b^3-1\}-b\{a^2+1\}\{a^3+1\}\times$$
$$\{b^2+1\}^2\}\}ab^2\{a-1\}^2\{b^3-1\}\{b^2-1\}\}\{a+1\}\times$$
$$\{a^3+1\}\{b+1\}\{b^3+1\}-\{a^2+1\}\{a^2+a+1\}\times$$
$$\{b^2+1\}\{b^2+b+1\}\}^2-\{b^3+1\}^2\}b^2\{a^3+1\}^2\times$$
$$\{b+1\}^2-a^2\{a^2+1\}^2\{b^2+b+1\}^2\}\}a\{a^2-1\}^2\times$$
$$\{b^2-1\}\{b^3-1\}-b\{a^2+1\}\{a^3+1\}\times$$
$$\{b^2+1\}^2\}\}:b\}\{a-1\}^2\{b+1\}\{b^3-1\}\}ab\{b^2+1\}\times$$
$$\{b^2+b+1\}\}b\{a+1\}^2\{a-1\}\{a^6-1\}\{b-1\}^2\times$$
$$\{b+1\}^3\{b^3+1\}-a\{a+1\}\{a^2+1\}^2\{a^3+1\}\{b+1\}\times$$
$$\{b^2+1\}\{b^3+1\}^2-b\{a+1\}\{a^2+1\}\{a^3-1\}^2\{b+1\}\times$$
$$\{b^3-1\}\{b^4-1\}+a\{a^2+1\}^3\{a^2+a+1\}\{b^2+1\}^2\{b^2$$
$$+b+1\}\{b^3+1\}\}-\{b+1\}\{b^3+1\}\}ab^2\{a+1\}^2\times$$
$$\{a-1\}\{a^6-1\}\{b+1\}\{b^3-1\}\{b^4-1\}-a^3\{a+1\}^3\times$$

$$\{a^2+1\}\{a-1\}^2\{b+1\}\{b^3-1\}^2\{b^3+1\}-b^3\times$$
$$\{a^2+1\}\{a^2+a+1\}\{a^3+1\}^2\{b+1\}\{b^2+1\}^3+a^2b\times$$
$$\{a+1\}\{a^2+1\}^2\{a^3+1\}\{b^2+b+1\}\{b^2+1\}^2\times$$
$$\{b^3+1\}\}\}\{ab\{b^2+1\}\{b^3-1\}\}\{a+1\}\{a^3+1\}\{b+1\}\times$$
$$\{b^3+1\}-\{a^2+1\}\{a^2+a+1\}\{b^2+1\}\{b^2+b+1\}\}\times$$
$$\}b\{a^2-1\}\{a^3-1\}\{b^2-1\}^2-a\{a^2+1\}^2\{b^2+1\}\times$$
$$\{b^3+1\}\}-\{b^2-1\}\{b^3+1\}\}b^2\{a^2+a+1\}\{a^3+1\}\times$$
$$\{b^2+1\}\{b^2+1\}-a^2\{a+1\}\{a^2+1\}\{b^2+b+1\}\times$$
$$\{b^3+1\}\}\}a\{a^2-1\}^2\{b^2-1\}\{b^3-1\}-b\{a^2+1\}\times$$
$$\{a^3+1\}\{b^2+1\}^2\}\}-\{b^2+1\}^2\}a\{b^2+b+1\}^2\times$$
$$\}b\{a^2-1\}\{a^3-1\}\{b^2-1\}^2-a\{a^2+1\}^2\{b^2+1\}\times$$
$$\{b^3+1\}\}^2-b\{b+1\}^2\}b\{a^3-1\}^2\{b^3-1\}\{b^2-1\}$$
$$-a\{a^2+1\}\{a^3+1\}\{b^3+1\}^2\}\}a\{a^2-1\}^2\{b^2-1\}\times$$
$$\{b^3-1\}-b\{a^2+1\}\{a^3+1\}\{b^2+1\}^2\}\}\}ab^2\{a-1\}^2\times$$
$$\{b^3-1\}\{b^2-1\}\}\}\{a+1\}\{a^3+1\}\{b+1\}\{b^3+1\}$$
$$-\{a^2+1\}\}a^2+a+1\}\{b^2+1\}\{b^2+b+1\}\}^2$$
$$-\{b^3+1\}^2\}b^2\{a^3+1\}^2\{b+1\}^2-a^2\{a^2+1\}^2\times$$
$$\{b^2+b+1\}^2\}\}a\{a^2-1\}^2\{b^2-1\}\{b^3-1\}-b\{a^2+1\}\times$$
$$\{a^3+1\}\{b^2+1\}^2\}\}\}.$$

Sistemas determinados de cinco ecuaciones.

863. $x=1$; $y=-1$; $z=2$; $u=-2$; $v=3$.

864. $x=1$; $y=-1$; $z=2$; $u=-2$; $v=3$.

865. $x=13;\ y=17;\ z=21;\ u=19;\ v=23.$

866. $x=8;\ y=7;\ z=6;\ u=-5;\ v=-7.$

867. $x=\frac{2}{3};\ y=\frac{1}{4};\ z=\frac{2}{5};\ u=\frac{1}{2};\ v=\frac{1}{3}.$

868. $x=1;\ y=2;\ z=3;\ u=-1;\ v=-3.$

869. $x=5;\ y=10;\ z=8;\ u=-5;\ v=-10.$

870. El sistema que resulta de eliminar z entre las cinco ecuaciones propuestas es

$$(1)\quad \begin{cases} a^3b^2x+\{a^2d^3+b^4\}y+c^2d^3u=b^2\{c^2+bd^3\}. \\ a^3b^2x+b^4y-d^6u-c^3d^3v=b^2c^2-a^3d^3. \\ \{a^3\{c^3-d^3\}-\{a^3-b^3\}d^3\}x+\{b^2\{c^3-d^3\} \\ -\{b^3-a^3\}d^3\}y-\{d^3-c^3\}d^3u-\{f^3+1\}d^3v \\ =c^2\{c^3-d^3\}-d^3m^4. \\ \{a^3\{c^2-1\}-\{a^2-1\}d^3\}x+\{b^2\{c^2-1\}-\{b^2 \\ -1\}d^3\}y-\{c^2-1\}d^3u-\{d^2-1\}d^3v= \\ c^2\{c^2-1\}-d^3m^3. \end{cases}$$

Eliminando y entre estas cuatro se llega al siguiente

$$(2)\begin{cases} -a^3b^2d^3x + d^3\{b^4c^2 + d^3\{a^2d^3+b^4\}\}u \\ + c^3d^3\{a^2d^3 + b^4\}v = b^6\{c^2 + bd^3\} \\ -\{b^2c^2-a^3d^3\}\{a^2d^3+b^4\}. \\ \{a^3b^2\{b^2\{c^2 - d^3\} - \{b^3 - a^3\}d^3\} - \{a^2d^3 \\ + b^4\}\{a^3\{c^3 - d^3\} - \{a^3 - b^3\}d^3\}\}x \\ + d^3\{c^2\{b^2\{c^3 - d^3\} - \{b^3 - a^3\}d^3\} + \{a^2d^3 \\ + b^4\}\{d^3 - c^3\}\}u + \{a^2d^3 + b^4\}\{f^3+1\}d^3v \\ = b^2\{c^2 + bd^3\}\{b^2\{c^3 - d^3\} - \{b^3 - a^3\}a^3\} \\ -\{c^2\{c^3-d^3\}-d^3m^4\}\{a^2d^3 + b^4\}. \\ \{a^3b^2\{b^2\{c^2-1\}-\{b^2-1\}d^3\}-\{a^2d^3+b^4\}\times \\ \{a^3\{c^2-1\}-\{a^2-1\}d^3\}\}x+d^3\{c^2\{b^2\{c^2-1\} \\ -\{b^2-1\}d^3\}+\{a^2d^3 + b^4\}\{c^2 - 1\}\}u+ \\ \{a^2d^3+b^4\}\{d^2-1\}d^3v=b^2\{c^2+bd^3\}\{b^2\{c^2-1\} \\ -\{b^2 - 1\}d^3\} - \{a^2d^3 + b^4\}\{c^2\{c^2 - 1\} \\ -d^3m^3\}. \end{cases}$$

Si en este se elimina u y v se hallará.

$$x=\{\{\{b^6\{c^2+bd^3\}-\{b^2c^2 - a^3d^3\}\{a^2d^3 + b^4\}\}\times$$
$$\{f^3+1\}-c^3\{b^2\{c^2+bd^3\}\}\{b^2\{c^3-d^3\}-\{b^3-a^3\}d^3\}$$
$$-\{c^2\{c^3-d^3\}-d^3m^4\}\{a^2d^3+b^4\}\}\}\{b^4c^2+d^3\{a^2d^3$$
$$+b^4\}\{d^2-1\}-c^3\{c^2\{b^2\{c^2-1\} - \{b^2 - 1\}d^3\}$$
$$+ \{a^2d^3 + b^4\}\{c^2 - 1\}\}\}-\{\{b^6\{c^2 + bd^3\}$$
$$-\{b^2c^2-a^3d^3\}\{a^2d^3+b^4\}\}\{d^2-1\} - c^3\{b^2\{c^2+$$
$$bd^3\}\{b^2\{c^2-1\} - \{b^2 - 1\}d^3\} - \{a^2d^3 + b^4\} \times$$

$$\{c^2\{c^2-1\}-d^3m^3\}\}\}\{b^4c^2+d^3\{a^2d^3+b^4\}\}\{f^3+1\}$$
$$-c^3\{c^2\{b^2\{c^3-d^3\}-\{b^3-a^3\{d^3\}+\{a^2d^3+b^4\}\times$$
$$\{d^3-c^3\}\}\}\} : \{\{-a^3b^2d^3\{f^3+1\}-c^3\{a^3b^2\{b^2\times$$
$$\{c^2-d^3\}-\{b^3-a^3\{d^3\}-\{a^2d^3+b^4\}\}a^3\{c^3-d^3\}$$
$$-\{a^3-b^3\{d^3\}\}\}\}\{b^4c^2+d^3\{a^2d^3+b^4\}\}\{d^2-1\}$$
$$-c^3\{c^2\{b^2\{c^2-1\}-\{b^2-1\{d^3\}+\{a^2d^3+b^4\}\times$$
$$\{c^2-1\}\}\}\}-a^3b^2d^3\{d^2-1\}-c^3\{a^3b^2\{b^2\{c^2-1\}$$
$$-\{b^2-1\{d^3\}-\{a^2d^3+b^4\}\}a^3\{c^2-1\}-\{a^2-1\}\times$$
$$d^3\}\}\}\times\{\{b^4c^2+d^3\{a^2d^3+b^4\}\}\{f^3+1\}$$
$$-c^3\{c^2\{b^2\{c^3-d^3\}-\{b^3-a^3\{d^3\}+\{a^2d^3+b^4\}\times$$
$$\{d^3-c^3\}\}\}\}.$$

La eliminacion de x y v da

$$u=\{\{\{b^6\{c^2+bd^3\}-\{b^2c^2-a^3d^3\}\{a^2d^3+b^4\}\}\times$$
$$\{f^3+1\}-c^3\{b^2\{c^2+bd^3\}\}b^2\{c^3-d^3\}-\{b^3-a^3\{d^3\}$$
$$-\{c^2\{c^3-d^3\}-d^3m^4\}\{a^2d^3+b^4\}\}\times$$
$$\{-a^3b^2d^3\{d^2-1\}-c^3\{a^3b^2\{b^2\{c^2-1\}-\{b^2$$
$$-1\{d^3\}-\{a^2d^3+b^4\}\{a^3\{c^2-1\}-\{a^2-1\}d^3\}$$
$$-\{\{b^6\{c^2+bd^3\}-\{b^2c^2-a^3d^3\}\{a^2d^3+b^4\}\}\times$$
$$\{d^2-1\}-c^3\{b^2\{c^2+bd^3\}\}b^2\{c^2-1\}-\{b^2-1\{d^3\}$$
$$-\{a^2d^3+b^4\}\{c^2\{c^2-1\}-d^3m^3\}\}\}\{-a^3b^2d^3\{f^3+1\}-$$

$$c^3\ \{a^3b^2\{b^2\{c^2-d^3\}-\{b^3-a^3\}d^3\}-\{a^2d^3+b^4\}\times$$

$$\{a^3\{c^3\ -\ d^3\}\ -\ \{a^3\ -\ b^3\}d^3\}\}\Big\}\ :$$

$$\Big\{\{\{b^4c^2+d^3\{a^2d^3+b^4\}\}\{f^3+1\}-c^3\{c^2\{b^2\{c^3-d^3\}$$

$$-\{b^3-a^3\}d^3\}+\{a^2d^3+b^4\}\{d^3-c^3\}\}\}-a^3b^2d^3\times$$

$$\{d^2\ -\ 1\}\ -\ c^3\{a^3b^2\{b^2\{c^2\ -\ 1\}\ -\ \{b^2\ -\ 1\}d^3\}$$

$$-\ \{a^2d^3\ +\ b^4\}\{a^3\{c^2\ -\ \ 1\}-\ \{a^2\ -\ 1\}d^3\}\}\Big\}$$

$$-\Big\{\{b^4c^2+d^3\{a^2d^3+b^4\}\}\{d^2-1\}-c^3\{c^2\{b^2\{c^2-1\}$$

$$-\{b^2-1\}d^3\}+\{a^2d^3+b^4\}\{c^2-1\}\}\}-a^3b^2d^3\{f^3+1\}$$

$$-c^3\{a^3b^2\{b^2\{c^2-d^3\}-\{b^3-a^3\}d^3\}-\{a^2d^3+b^4\}\times$$

$$\{a^3\{c^3-d^3\}-\{a^3-b^3\}d^3\}\}\Big\}.$$

La de x y u produce

$$\mathrm{v}=\Big\{\{\{b^6\{c^2+bd^3\}-\{b^2c^2-a^3d^3\}\{a^2d^3+b^4\}\}\times$$

$$\{a^3b^2\{b^2\{c^2-d^3\}-\{b^3-a^3\}d^3\}-\{a^2d^3+b^4\}\times$$

$$\{a^3\{c^3-d^3\}-\{a^3-b^3\}d^3\}\}+a^3b^2d^3\{b^2\{c^2+bd^3\}\times$$

$$\{b^2\{c^3-d^3\}-\{b^3-a^3\}d^3\}-\{c^2\{c^3-d^3\}-d^3m^4\}\times$$

$$\{a^2d^3\ +\ b^4\}\}\}\{b^4c^2\ +\ d^3\{a^2d^3\ +\ b^4\}\}\{a^3b^2\ \times$$

$$\{b^2\{c^2\ -\ 1\}-\{b^2\ -\ 1\}d^3\}\ -\ \{a^2d^3\ +\ b^4\}\ \times$$

$$\{a^3\{c^2-1\}-\{a^2-1\}d^3\}+a^3b^2d^3\{c^2\{b^2\{c^2-1\}-$$

$$\{b^2-1\}d^3\}+\{a^2d^3+b^4\}\{c^2-1\}\}\}-\{\{b^6\{c^2+bd^3\}$$

$$-\{b^2c^2-a^3d^3\}\{a^2d^3+b^4\}\}\{a^3b^2\}b^2\{c^2-1\}$$

$$-\{b^2-1\}d^3\}-\{a^2d^3+b^4\}\{a^3\{c^2-1\}$$

$$-\{a^2-1\}d^3\}+a^3b^2d^3\}b^2\{c^2+bd^3\}\}b^2\{c^2-1\}$$

$$-\{b^2-1\}d^3\}-\{a^2d^3+b^4\}\{c^2\{c^2-1\}-d^3m^3\}\}\}\times$$

$$\{\{b^4c^2+d^3\{a^2d^3+b^4\}\}\{a^3b^2\}b^2\{c^2-d^3\}$$

$$-\{b^3-a^3\}d^3\}-\{a^2d^3+b^4\}\{a^3\{c^3-d^3\}$$

$$-\{a^3-b^3\}d^3\}\}+a^3b^2d^3\}c^2\}b^2\{c^3-d^3\}$$

$$-\{b^3-a^3\}d^3\}+\{a^2d^3+b^4\}\{d^3-c^3\}\}\}\}:$$

$$\{d^3\{a^2d^3+b^4\}\{c^3\}a^3b^2\}b^2\{c^2-d^3\}-\{b^3-a^3\}d^3\}$$

$$-\{a^2d^3+b^4\}\{a^3\{c^3-d^3\}-\{a^3-b^3\}d^3\}\}$$

$$+a^3b^2d^3\{f^3+1\}\}\{\{b^4c^2+d^3\{a^2d^3+b^4\}\}\times$$

$$\{a^3b^2\}b^2\{c^2-1\}-\{b^2-1\}d^3\}-\{a^2a^3+b^4\}\times$$

$$\{a^3\{c^2-1\}-\{a^2-1\}d^3\}\}+a^3b^2a^3\}c^2\}b^2\{c^2-1\}$$

$$-\{b^2-1\}d^3\}+\{a^2d^3+b^4\}\{c^2-1\}\}\}$$

$$-\{c^3\}a^3b^2\}b^2\{c^2-1\}-\{b^2-1\}d^3\}-\{a^2d^3+b^4\}\times$$

$$\{a^3\{c^2-1\}-\{a^2-1\}d^3\}\}+a^3b^2d^3\{d^2-1\}\}\times$$

$$\{\{b^4c^2+d^3\{a^2d^3+b^4\}\}\{a^3b^2\}b^2\{c^2-d^3\}-\{b^3-a^3\}d^3\}$$

$$-\{a^2d^3+b^4\}\{a^3\{c^3-d^3\}-\{a^3-b^3\}d^3\}\}$$

$$+ a^3b^2d^3\{c^2\{b^2\{c^3 - d^3\} - \{b^3 - a^3\{d^3\} + \{a^2d^3+b^4\}\{d^3-c^3\}\}\}\}.$$

Por último si entre las cinco ecuaciones propuestas se elimina x, u y v se llega al sistema

$$\{c^3\{a^3-b^3\}\{a^3+b^2\}-a^3\{c^3\{c^3-d^3\}+d^3\{f^3+1\}\}y$$
$$+ \{c^2\{a^3b^2\{f^3+1\} + c^3\{2a^3-b^3\{d^3-a^3c^3\}\}$$
$$+ a^3b^2\{c^3\{c^3 - d^3\} + d^3\{f^3 + 1\}\}\}z = c^2\times$$
$$\{a^6\{f^3+1\}+c^3\{a^3\{c^2-m^4\}-b^3c^2\}-a^3b^3\{c^3\{c^3-d^3\}$$
$$+d^3\{f^3+1\}\};$$
$$\{c^2\}\{a^3 - b^3\}\{a^3 + b^2\}\{d^2 - 1\} - \{b^2\{a^2-1\}-$$
$$a^3\{b^2 - 1\}\}\{f^3 + 1\}\}-a^3\{c^3-d^3\}\{d^2-1\}+$$
$$\{c^2-1\}\{f^3+1\}\}\}y+\{c^2\}\{\{2a^3-b^3\{d^3-a^3c^3\}\times$$
$$\{d^2-1\}-\{d^3\{a^2 - 1\}- a^3\{c^2 - 1\}\}\{f^3+ 1\}\}$$
$$+a^3b^2\{\{c^3-d^3\}\{d^2-1\}+\{c^2-1\}\{f^3+1\}\}\}z=$$
$$c^2\}\{a^3\{c^2-m^4\}-b^3c^2\}\{d^2-1\}-\{c^2\{a^2-1\}-a^3m^3\}\times$$
$$\{f^3 + 1\}\} - a^3b^3\{\{c^3 - d^3\}\{d^2 - 1\} +$$
$$\{c^2-1\}\{f^3+1\}\},$$

del cual resultan

$$y=\{\{c^2\{a^6\{f^3+1\}+c^3\{a^3\{c^2-m^4\}-b^3c^2\}\}-$$

$$a^3b^3\{c^3\{c^3-d^3\}+d^3\{f^3+1\}\}\}\{c^2\{\{\{2a^3-b^3\}\times$$
$$d^3-a^3c^3\}\{d^2-1\}-\{d^3\{a^2-1\}-a^3\{c^2-1\}\}\times$$
$$\{f^3+1\}\}+a^3b^2\{\{c^3-d^3\}\{d^2-1\}+\{c^2-1\}\times$$
$$\{f^3+1\}\}\}-\{c^2\{\{a^3\{c^2-m^4\}-b^3c^2\}\{d^2-1\}-$$
$$\{c^2\{a^2-1\}-a^3m^3\}\{f^3+1\}\}-a^3b^3\}\{c^3-d^3\}\times$$
$$\{d^2-1\}+\{c^2-1\}\{f^3+1\}\}\}\{c^2\{a^3b^2\{f^3+1\}$$
$$+c^3\}\{2a^3-b^3\}d^3-a^3c^3\}+a^3b^2\}c^3\{c^3-d^3\}$$
$$+d^3\{f^3+1\}\}\}\}:\{\{c^3\{a^3-b^3\}\{a^3+b^2\}-a^3\times$$
$$\{c^3\{c^3-d^3\}+d^3\{f^3+1\}\}\}\{c^2\{\{\{2a^3-b^3\}d^3-$$
$$a^3c^3\}\{d^2-1\}-\{d^3\{a^2-1\}-a^3\{c^2-1\}\}\{f^3+1\}\}$$
$$+a^3b^2\}\{c^3-d^3\}\{d^2-1\}+\{c^2-1\}\{f^3+1\}\}\}$$
$$-\{c^2\{\{a^3-b^3\}\{a^3+b^2\}\{d^2-1\}-\{b^2\{a^2-1\}$$
$$-a^3\{b^2-1\}\}\{f^3+1\}\}-a^3\}\{c^3-d^3\}\{d^2-1\}+$$
$$\{c^2-1\}\{f^3+1\}\}\}\{c^2\{a^3b^2\{f^3+1\}+c^3\times$$
$$\{\{2a^3-b^3\}d^3-a^3c^3\}+a^3b^2\}c^3\{c^3-d^3\}$$
$$+d^3\{f^3+1\}\}\}\}.$$

$$z=\{\{c^2\{a^6\{f^3+1\}+c^3\}a^3\{c^2-m^4\}-b^3c^2\}\}$$
$$-a^3b^3\}c^3\{c^3-d^3\}+d^3\{f^3+1\}\}\}\{c^2\{\{a^3-b^3\}\times$$
$$\{a^3+b^2\}\{d^2-1\}-\{b^2\{a^2-1\}-a^3\{b^2-1\}\}\times$$
$$\{f^3+1\}\}-a^3\}\{c^3-d^3\}\{d^2-1\}+\{c^2-1\}\times$$
$$\{f^3+1\}\}\}-\{c^2\{\{a^3\{c^2-m^4\}-b^3c^2\}\{d^2-1\}-$$
$$\{c^2\{a^2-1\}-a^3m^3\}\{f^3+1\}\}-a^3b^3\}\{c^3-d^3\}\times$$

$$\{d^2-1\}+\{c^2-1\}\{f^3+1\}\}\}\{c^3\{a^3-b^3\}\{a^3+b^2\}$$

$$-a^3\{c^3\{c^3-d^3\}+d^3\{f^3+1\}\}\}:\{\{c^2\{a^3b^2\times$$

$$\{f^3+1\}+c^3\{2a^3-b^3\{d^3-a^3c^3\}\}+a^3b^2\times$$

$$\{c^3\{c^3-d^3\}+d^3\{f^3+1\}\}\}\{c^2\{\{a^3-b^3\}\times$$

$$\{a^3+b^2\}\{d^2-1\}-\{b^2\{a^2-1\}-a^3\{b^2-1\}\}\times$$

$$\{f^3+1\}\}-a^3\{c^3-d^3\}\{d^2-1\}+\{c^2-1\}\{f^3+1\}\}\}$$

$$-\{c^2\{\{2a^3-b^3\{d^3-a^3c^3\}\{d^2-1\}-$$

$$\{d^3\{a^2-1\}-a^3\{c^2-1\}\}\{f^3+1\}\}+a^3b^2\times$$

$$\{\{c^3-d^3\}\{d^2-1\}+\{c^2-1\}\{f^3+1\}\}\}\{c^3\times$$

$$\{a^3-b^3\}\{a^3+b^2\}-a^3\{c^3\{c^3-d^3\}+d^3\{f^3+1\}\}\}\}.$$

871. $x=1$; $y=-1$; $z=2$; $u=-2$; $v=3$.

Todas las ecuaciones literales propuestas en este capítulo han sido pensadas muy detenidamente, á fin de familiarizar al calculador con la descomposicion y recomposicion de expresiones de la forma $\{a^m-b^m\}:\{a-b\}$;

$$\{a^m\pm b^m\}\times\{a^m-b^m\}.$$

Ecuaciones indeterminadas.

872. $x=14+119t$; $y=3-39t$. Si $t=0$, serán $x>0$, $y>0$.

873. $x = 2 \pm 137t$; $y = 3 \mp 127t$.
Si $t = o$, serán $x > o$, é $y > o$.

874. $x = 37 - 73t'$; $y = -18 + 39t'$.

875. $x = 51 - 323t''$; $y = -790 + 5005t''$.

876. $x = -6210 + 12673t'''$; $y = 8580 - 17017t'''$.

877. $x = -237 + 551t''$; $y = 117 - 221t''$.

878. $x = -15614 + 33263t''$; $y = 1972 - 4199t''$.

879. $x = -422 + 26071t''$; $y = 4 - 247t''$.

880. $x = -140 + 539t_2$; $y = 50 - 185t_2$.

881. $x = 58 - 493t$; $y = -200 + 2325t$.

882. $x = 29t$; $y = 30 - 89t$.

883. $x = 29 - 870t$; $y = -3 + 97t$.

884. $x = -244 + 503t_2$; $y = 52 - 103t_2$.

885. $x = -8 + 107t_2$; $y = -72 + 833t_2$.

886. $x = 127 + 509t$; $y = 635 + 2550t$.

887. $x = 3 - 207t_1$; $y = -2 - 113t_1$.

888. $x = 15207 - 755t$; $y = -4995 + 248t$.

889. $x = -36503 + 532t$; $y = 8440 - 123t$.

890. $x = -1677 + 118t$; $y = 10105 - 711t$.

891. $x = 199281 - 512t$; $y = -160746 + 413t$.

892. $x=-38151+902t$; $y=9263-219t$.

893. $x=-2500+213t$; $y=6000-511t$.

894. $x=3584-25t$; $y=-6144+43t$.
Solo cuando $t=143$ serán $x>0$ é $y>0$.

895. $x=2057-64t$; $y=-1573+49t$.

896. $x=4098-17t$; $y=-41663+173t$.
Solo cuando $t=241$ serán $x>0$, $y>0$.

897. $x=-1029+11t$; $y=1715-18t$.
Cuando $t=94$ ó $t=95$ serán $x>0$, $y>0$.

898. $x=875-18t$; $y=2375-49t$.
Si $t<49$, resultarán $x>0$, $y>0$.

899. $x=-24168+77t$; $y=-29203+93t$.
Si $t>314$ serán $x>0$ é $y>0$.

900. $x=5262-13t$; $y=35957-89t$.
Si $t<405$ serán $x>0$ é $y>0$.

901. $t=404$ por el cual resulta $x=10$ é $y=1$.

902. $x=-45+23t$; $y=-153+78t$.
Si $t>1$ serán $x>0$ è $y>0$.

903. $t=2$ por el cual resulta $x=1$ é $y=3$.

904. $x=-194+7t$; $y=-679+25t$.
Si $t>27$, serán $x>0$ é $y>0$.

905. $t=28$ por el cual resultan $x=2$ é $y=21$.

906. $x=5+17t_1$; $y=4-43t_1$; $z=3+19t_1$.

907. $x = -1440 + 167t$; $y = 1603 - 184t$;
$z = -320 + 37t$.

908. $x = 3 - 8t_1$; $y = 3 + 53t_1$; $z = 3 - 19t_1$.

909. $x = 1 + 2t$; $y = 2 + 29t$; $z = 3 - 38t$.

910. $x = 9 - 8t$; $y = -25 + 32t$; $z = 5 - 5t$.

911. $x = 979 - 2679t_2$; $y = -122 + 323t_2$;
$z = -939 + 2601t_2$.

912. $x = 2 - 1183t_1$; $y = 3 + 4862t_1$;
$z = 4 + 1199t_1$.

913. $x = 2 - 1105t_1$; $y = 2 - 1729t_1$;
$z = 3 - 190t_1$.

914. $x = 5 - 902t_1$; $y = 6 - 288t_1$; $z = 7 + 306t_1$.

915. $x = 10 + 52t_1$; $y = 9 + 64t_1$; $z = 8 + 169t_1$.

916. $x = 57 - 55t$; $y = 120 - 117t$;
$z = -23 + 28t$; $u = -46 + 53t$.

917. $x = 4 - 20t_1$; $y = 5 + 116t_1$; $z = 3 - 423t_1$;
$u = 2 + 133t_1$.

918. $x = 10 - 369t_1$; $y = 11 + 1207t_1$;
$z = 9 + 616t_1$; $u = 8 + 164t_1$.

919. $x=5-1165t_2$; $y=4-352t_2$; $z=3+811t_2$; $u=11+1120t_2$.

920. $x=25-9t$; $y=-7+7t$; $z=-7+7t$; $u=-1+4t$.

921. $x=2-2t$; $y=3-9t$; $z=4+11t$; $u=5-10t$.

922. $x=3-4t$; $y=4+5t$; $z=5$; $u=6+7t$.

923. $x=25+3t$; $y=1-2t$; $z=12$; $u=13$.

924. $x=11+t$; $y=27-t$; $z=17$; $u=18$.

925. $x=56-18y$; $z=28y-80$; $u=5y-10$.

926. $z=2+3t$; $u=-2+4t$; $y=-1-82t$; $x=1+107t$.

927. $x=2-140t$; $y=2-161t$; $z=2+5t$; $u=2-183t$; $v=2-238t$.

928. $x=1+506t$; $y=2-1002t$; $z=3-101t$; $u=4-1115t$; $v=5+1139t$.

929. Eliminando v entre la primera y cada una de las otras tres se llega á un sistema de tres ecuaciones, una con x, y, z, u; otra con x, y, z; y otra con x é y, cuyo sistema, combinado con la primera de las dadas, dará

$$x=9-y;\ z=3;\ u=2;\ v=1.$$

Observando que la ecuacion con dos incógni-

tas $x+y=9$ queda satisfecha por $x=1+t$, $y=8-t$, se hallará tambien

$$z=3;\ u=2;\ v=1.$$

930. $x=2-69t_1;\ y=3+43t_1;\ z=4-47t_1;$
$u=5+36t_1;\ v=6-56t_1.$

931. $x=10+136t_1;\ y=9-180t_1;\ z=8-121t_1;$
$u=-10+20t_1;\ v=-9-43t_1.$

932. $x=3+53t_1;\ y=4-33t_1;\ z=5-23t_1;$
$u=6+3t_1;\ v=-3-22t_1.$

933. $x=42+z-11t;\ y=-1-2z+9t.$

Para que todos sean positivos es preciso que si $z=12$, sea $t\gtrless\frac{2}{3}$; siempre ha de ser $z<29$, y no todos los valores desde $+1$ á $+28$ dan para t límites compatibles.

934. $x=6-5z-17t_1;\ y=2z+5t_1.$

935. $x=-2-3z+25t;\ y=-4-4z+23t.$

936. $x=-62+6z-12t;\ y=2z-7t.$

937. $x=-3+50t_1-5t_2;\ y=-1+2t_2;$
$z=7-30t_1.$

938. $x=1-5t_3+5t_4;\ y=1-3t_4;\ z=41+11t_3.$

939. $x=6t-3z';\ y=4-11t;\ z=2z'.$

940. $x=4t-4z'$; $y=4-5t$; $z=9z'$.

941. $x=-2+7t_1+7t_2$; $y=3t_2$; $z=9-26t_1$.

942. $y=7x'+7z'-3$; $x=15x'$; $z=13z'$.

943. $x=11t-8z'$; $y=7-7t$; $z=13z'$.

944. $x=26-4z-2u-5t$; $y=3t+z-u$.

945. $x=u+3t$; $z=32-4u-2y-5t$.

946. $x=1+u-z+2t$; $y=-13-2u+z+3t$.

947. $x=3y+35t+10z+10$; $u=1+z+2t$.

948. $x=69+z-2u+23t$; $y=1+z-2u+11t$.

949. $x=27+z+14u$; $y=-19-2z-11u$.

950. $y=-11-u$; $x=11-z$.

951. $y=-125+30x+21z$; $u=144-36x-25z$.

952. $x=1-5t$; $z=35-16y-283t$;
$u=14-5y-69t$.

953. $x=-1+10t+2t_1$; $y=2+t-3t_1$;
$z=-2+3t+4t_1$; $u=-21+34t+19t_1$.

954. $x=1-3t+2t_1$; $y=2-11t+10t_1$; $z=2t_1$;
$u=-1+17t-15t_1$.

955. $x=14-z$; $y=18-u$; $v=0$.

956. $x=3-y-z$; $u=-3$; $v=4$.

957. $x=3-z$; $y=-3-u$; $v=3$.

958. $x=1$; $y=5-z$; $u=-5-v$.

959. $x=19-z+8u$; $y=5+3u$; $v=-21-12u$.

960. $x=-7-3y-5t$; $z=-8-5y-5t$; $u=2t$; $v=22+8y+11t$.

961. $x=-5+u+5t$; $y=2t-u$; $v=-11+2u+10t$; $z=26-4u-21t$.

Sistemas singulares de ecuaciones de primer grado.

962. $x=\frac{0}{0}$; $y=\frac{0}{0}$. Las soluciones enteras son: $x=15-13t$; $y=-4+7t$; y para que sean positivas ha de ser $t=1$.

963. $x=\frac{0}{0}$; $y=\frac{0}{0}$.

$x=1-2t$; $y=-1+5t$.

No admite sistemas de valores positivos.

964. $x=\frac{0}{0}$; $y=\frac{0}{0}$.

$x=1-7t$; $y=1+t$.

Para que sean positivas ha de ser $t=0$.

965. $x=\frac{0}{0}$; $y=\frac{0}{0}$.

$x=2-11t$; $y=-2+13t$.

No admite soluciones positivas.

966. $x=\frac{0}{0}$; $y=\frac{0}{0}$.

$x=10-9t_1$; $y=-3+7t_1$.

Para que sean positivas ha de ser $t=1$.

967. $x=\frac{0}{0}$; $y=\frac{0}{0}$.

$x=4+19t$; $y=-1+6t$. $t>o$.

968. $x=\frac{0}{0}$; $y=\frac{0}{0}$.

$x=-1+37t$; $y=-1+23t$. $t>o$.

969. $x=\frac{0}{0}$; $y=\frac{0}{0}$.

$x=12-18t$; $y=-14+37t$.

No admite sistemas de valores positivos.

970. $x=\frac{0}{0}$; $y=\frac{0}{0}$.

No tiene solucion en números enteros.

971. $x=\frac{0}{0}$; $y=\frac{0}{0}$.

$x=-176+836t_1$; $y=1365-5551t_1$.

No admite sistemas de valores positivos.

972. $x=\frac{0}{0}$; $y=\frac{0}{0}$.

$x=-56+2428t_1$; $y=51-2055t_1$.

No admite sistemas de valores positivos.

973. $x=\frac{0}{0}$; $y=\frac{0}{0}$; $z=\frac{0}{0}$.

$x=117-16z$; $y=-57+9z$.

La única solucion positiva resulta haciendo $z=7$.

974. $x=\frac{0}{0}$; $y=\frac{0}{0}$; $z=\frac{0}{0}$.

$x=1+3t$; $y=-81+41t$; $z=-51+27t$.

Para que resulten positivos ha de ser $t>1$. Se ha empezado por eliminar y.

975. $x=\frac{0}{0}$; $y=\frac{0}{0}$; $z=\frac{0}{0}$.

$x=11-19t$; $y=2-14t$; $z=1+27t$. $t=0$.

976. $x=\frac{0}{0}$; $y=\frac{0}{0}$; $z=\frac{0}{0}$.

$x=5+135t$; $y=7+439t$; $z=9+407t$. $t>-1$.

977. $x=\frac{0}{0}$; $y=\frac{0}{0}$; $z=\frac{0}{0}$.

$x=1-9749t$; $y=2-3302t$; $z=3+3779t$. $t=0$.

978. $x=\frac{0}{0}$; $y=\frac{0}{0}$; $z=\frac{0}{0}$.

$x=3-21t$; $y=5-40t$; $z=7+11t$. $t=0$.

979. $x=\frac{0}{0}$; $y=\frac{0}{0}$; $z=\frac{0}{0}$.

$z=-7$; $x=1-t$; $y=-2+t$.

No admite sistemas positivos,

980. $x=\frac{0}{0}$; $y=\frac{0}{0}$; $z=\frac{0}{0}$.

$z=-5$; $x=1+t$; $y=5-t$; $t\geqslant -1$.

981. $x=\frac{0}{0}\ ;\ y=\frac{0}{0}\ ;\ z=\frac{0}{0}\ .$

$z=5;\ x=2+t;\ y=-3+t;\ t>3.$

982. $x=\frac{0}{0}\ ;\ y=\frac{0}{0}\ ;\ z=\frac{0}{0}\ .$

$z=1;\ x=5+t;\ y=-1+t;\ t>1.$

983. $x=\frac{0}{0}\ ;\ y=\frac{0}{0}\ ;\ z=\frac{0}{0}\ .$

$y=8;\ x=17+t;\ z=-23+t;\ t>23.$

984. $x=\frac{0}{0}\ ;\ y=\frac{0}{0}\ ;\ z=\frac{0}{0}\ .$

$y=3;\ x=8-t;\ z=8+t;\ t\gtrless^{-8}_{<8}\ .$

985. $x=\frac{0}{0}\ ;\ y=\frac{0}{0}\ ;\ z=\frac{0}{0}\ .$

$x=-t;\ y=-68t;\ z=49t.$

No admite sistemas positivos.

986. $x=\frac{0}{0}\ ;\ y=\frac{0}{0}\ ;\ z=\frac{0}{0}\ .$

$x=t;\ y=5t;\ z=7t;\ t>0.$

987. $x=\frac{0}{0}\ ;\ y=\frac{0}{0}\ ;\ z=\frac{0}{0}\ .$

$z=7x;\ y=-x.$

No admite sistemas positivos.

988. $x=\frac{0}{0}\ ;\ y=\frac{0}{0}\ ;\ z=\frac{0}{0}\ .$

$x=-8z;\ y=3z.$

No admite sistemas positivos.

989. $x=\frac{0}{0}$; $y=\frac{0}{0}$; $z=\frac{0}{0}$.

$x=330t$; $y=99t$; $z=57t$. $t>0$.

990. $x=\frac{0}{0}$; $y=\frac{0}{0}$; $z=\frac{0}{0}$.

$x=157y$; $z=-145y$.

No admite sistemas positivos.

991. $x=\frac{0}{0}$; $y=\frac{0}{0}$.

$x=7+3t$; $y=2+7t$. $t>-1$.

992. $x=\frac{0}{0}$; $y=\frac{0}{0}$.

$y=-4+13t_1$; $x=-5+18t_1$. $t>0$.

993. $x=\frac{0}{0}$; $y=\frac{0}{0}$.

$x=20-13t_1$; $y=-4+11t_1$. $t_1=1$.

994. $x=\frac{0}{0}$; $y=\frac{0}{0}$,

$x=3+13t$; $y=4+27t$. $t>-1$.

995. $x=\frac{0}{0}$; $y=\frac{0}{0}$.

$x=2+5t$; $y=-3+17t$. $t>0$.

996. $x=\frac{0}{0}$; $y=\frac{0}{0}$.

$x=2+5285t$; $y=3+2652t$. $t>-1$.

997. $x=\frac{0}{0}$; $y=\frac{0}{0}$.

$x=10+155t$; $y=8+112t$. $t>-1$.

998. $x=\frac{0}{0}$; $y=\frac{0}{0}$; $z=\frac{0}{0}$.

$x=9+4725t;\ y=12+124t;\ z=7-3984t.$

$t=0.$

999. $x=\frac{0}{0};\ y=\frac{0}{0};\ z=\frac{0}{0}.$

$x=-3-110t;\ y=2+263t;\ z=-5+281t.$

Este ejemplo y los 1000, 1001 y 1002 no admiten sistemas de valores enteros y positivos.

1000. $x=\frac{0}{0};\ y=\frac{0}{0};\ z=\frac{0}{0}$

$x=10-327t;\ y=8+7t;\ z=-3+55t.$

1001. $x=\frac{0}{0};\ y=\frac{0}{0};\ z=\frac{0}{0}.$

$x=10-327t;\ y=8+7t;\ z=-3+55t.$

1002. $x=\frac{0}{0};\ y=\frac{0}{0};\ z=\frac{0}{0}.$

$x=-3-110t;\ y=2+263t;\ z=-5+281t.$

1003. $x=\frac{0}{0};\ y=\frac{0}{0};\ z=\frac{0}{0}.$

$x=6+240t_1;\ y=5-26545t_1;\ z=21-21273t_1.$

$t=0.$

1004. $x=\infty;\ y=-\infty.$

1005. $x=\infty;\ y=-\infty.$

1006. $x=\infty;\ y=-\infty.$

1007. $x=-\infty;\ y=-\infty.$

1008. $x=-\infty;\ y=-\infty.$

1009. $x=\infty;\ y=\infty.$

1010. $x=-\infty\,;\ y=\infty\,;\ z=\infty\,.$

1011. $x=-\infty\,;\ y=\infty\,;\ z=\infty\,.$

1012. $x=\infty\,;\ y=-\infty\,;\ z=-\infty\,.$

1013. $x=\infty\,;\ y=\infty\,;\ z=-\infty\,.$

1014. $x=-\infty\,;\ y=\infty\,;\ z=-\infty\,.$

1015. $x=\frac{209}{109};\ y=-\frac{23}{109}$. **1016.** $x=2;\ y=3.$

1017. $x=2;\ y=-5$. **1018.** $x=5;\ y=1.$

1019. $x=3;\ y=5.$

1020. $x=3;\ y=4;\ z=7.$

1021. $x=5;\ y=-5;\ z=-4.$

1022. $x=4;\ y=5;\ z=-4.$

1023. $x=-2;\ y=-3;\ z=-4.$

1024. $x=10;\ y=5;\ z=-2.$

1025. $x=8;\ y=10;\ z=9.$

1026. $x=6;\ y=30;\ z=120.$

1027. $x=6;\ y=5;\ z=21.$

Ecuaciones de segundo grado.

1028. $x=21\pm2$. **1029.** $x=\frac{33\pm1}{2}$.

1030. $x = \frac{53 \pm 7}{2}$. **1031.** $x = \frac{69 \pm 23}{2}$.

1032. $x = \frac{-93 \pm 31}{2}$. **1033.** $x = \frac{-87 \pm 29}{2}$

1034. $x = \frac{-129 \pm 43}{2}$. **1035.** $x = -75 \pm 25$.

1036. $x = -42 \pm 70$. **1037.** $x = \frac{243 \pm 297}{2}$.

1038. $x = \frac{-11 \pm 75}{2}$. **1039.** $x = \frac{9 \pm 207}{2}$.

1040. $x = \frac{11 \pm 1}{2}$. **1041.** $x = \frac{929 \pm 2101}{606}$

1042. $x = \frac{-845 \pm \sqrt{701737}}{480}$. **1043.** $x = \frac{7 \pm \sqrt{-894191}}{360}$.

1044. $x = \frac{1 \pm \sqrt{-309825}}{188}$. **1045.** $x = \frac{1 \pm \sqrt{-27551}}{82}$.

1046. $x = 10 \pm 2$. **1047.** $x = \pm 10$,

1048. $x = -5 \pm 3$. **1049.** $x = \frac{3 \pm \sqrt{123}}{2}$.

1050. $x = \frac{-125 \pm \sqrt{247465}}{72}$. **1051.** $x = \frac{135 \pm \sqrt{68290}}{95}$.

1052. $x = \frac{521 \pm \sqrt{2\,71990}}{3}$. **1053.** $x = \frac{-141 \pm 144}{4}$.

1054. $x = \frac{7 \pm 3}{2}$. **1055.** $x = \frac{-11 \pm 5}{2}$.

1056. $x=\frac{208\pm\sqrt{60186564}}{569}$.

1057. $x=\frac{-38843\pm\sqrt{4056256729}}{1154}$. **1058.** $x=\frac{-851\pm211}{384}$.

1059. $x=\frac{12\pm21}{88}$. **1060.** $x=\pm12$.

1061. $x=\pm8$. **1062.** $x=\frac{-275520\pm450\sqrt{545947}}{4091}$.

1063. $x=10$. **1064.** $x=\frac{157\pm157}{85}$.

1065. $x=\frac{254\pm254}{19}$. **1066.** $x=\frac{-7\pm7}{276}$.

1067. $x=\frac{114-15a\pm(75a-6)}{180}$.

1068. $x=\frac{180a-327\pm(280a-313)}{200}$

1069. $x=\pm\sqrt[\frac{1}{63}]{-103637\pm20\sqrt{-2068559}}$;

$y=\frac{-1147\pm4\sqrt{-2068559}}{6993}$.

1070. $x=\pm\sqrt[\frac{1}{20}]{\frac{1299\pm19\sqrt{1441}}{2}}$; $y=-\frac{1\pm\sqrt{1441}}{40}$.

1071. $x=\pm\sqrt[\frac{1}{9}]{\frac{1828\pm208}{5}}$; $y=-\frac{7\pm52}{45}$.

1072. $x=\pm\sqrt{\frac{12281\pm7161}{5120}}$; $y=\frac{11\pm651}{320}$.

1073. $x=0\ ;\ y=\frac{-1\pm\sqrt{-3}}{2}$.

1074. $y=-\frac{2x}{5x}$. $x=0$. $x=\pm\frac{1}{5}\sqrt{-19}$.

Ecuaciones bicuadradas.

1075. $x=\pm\sqrt{\frac{41\pm 9}{2}}$. **1076.** $x=\pm\sqrt{\frac{949\pm 851}{2}}$.

1077. $x=\pm\sqrt{544\pm 480}$. **1078.** $x=\pm 10\ ;\ \pm 40$.

1079. $x=\pm\frac{3}{17}\ ;\ \pm\frac{5}{19}$. **1080.** $x=\pm\frac{7}{9}\ ;\ \pm\frac{11}{27}$,

1081. $x=\pm\frac{15}{25}\ ;\ \pm\frac{15}{85}$. **1082.** $x=\pm\frac{3}{5}\ ;\ \pm\frac{7}{25}$.

1083. $x=\pm\frac{7}{9}\ ;\ \pm 19$. **1084.** $x=\pm\frac{5}{8}\ ;\ \pm 8$.

1085. $x=\pm 12\ ;\ \pm\sqrt{-2}$.

1086. $x=\pm 9\ ;\ \pm 9\sqrt{-10}$.

1087. $x=\pm 17\ ;\ x=\pm 17\sqrt{-1}$.

1088. $x=\pm 17\ ;\ \pm 17\sqrt{-2}$.

1089. $x=\pm 34\ ;\ \pm 17\sqrt{-1}$.

1090. $x=\pm\frac{17}{2}\ ;\ x=\pm 17\sqrt{-2}$.

1091. $x=\pm 17\ ;\ \pm\sqrt{-17}$.

1092. $x = \pm\sqrt{-2}\,;\ \pm\sqrt{-3}.$

1093. $x = \pm 2\sqrt{-2}\,;\ \pm 2\sqrt{-3}.$

1094. $x = \pm 2\sqrt{-3}\,;\ \pm 3\sqrt{-2}.$

1095. $x = \pm\frac{3}{5}\sqrt{-2}\,;\ \pm\frac{2}{5}\sqrt{-3}.$

1096. $x = \pm\frac{5}{7}\sqrt{-7}\,;\ \pm\frac{7}{5}\sqrt{-5}.$

1097. $x = \pm\frac{2}{3}\sqrt{-\frac{3}{2}}\,;\ \pm\frac{3}{2}\sqrt{-\frac{2}{3}}.$

1098. $x = \pm\sqrt{\frac{11 \pm \sqrt{821}}{10}}$, **1099.** $x = \pm\sqrt{3 \pm \sqrt{10}}.$

1100. $x = \pm\sqrt{\pm\sqrt{5}}.$ **1101.** $x = \pm\sqrt{\frac{25 \pm 5\sqrt{33}}{2}}.$

1102. $x = \pm\sqrt{\pm\sqrt{-\frac{244}{21}}}.$

1103. $x = \pm\frac{1}{2}\sqrt{\frac{-1 \pm 5\sqrt{-23}}{2}}.$

Fracciones continuas.

1104.
$$\cfrac{1}{1 + \cfrac{1}{1 + -}}$$

1105.
$$\cfrac{1}{1 + \cfrac{1}{2 + \cfrac{1}{3 + \frac{1}{4}}}}$$

1106. $3+\cfrac{1}{1+\cfrac{1}{1+\cfrac{1}{1+\frac{1}{3}}}}$

1107. $5+\cfrac{1}{2+\cfrac{1}{2+\cfrac{1}{2+\frac{1}{3}}}}$

1108. $2+\cfrac{1}{2+\cfrac{1}{4+\cfrac{1}{6+\frac{1}{6}}}}$

1109. $1+\cfrac{1}{7+\cfrac{1}{1+\cfrac{1}{8+\frac{1}{4}}}}$

1110. $1+\cfrac{1}{3+\cfrac{1}{2+\cfrac{1}{4+\frac{1}{8}}}}$

1111. $\cfrac{1}{1+\cfrac{1}{6+\cfrac{1}{3+\cfrac{1}{1+\cfrac{1}{1+\frac{1}{16}}}}}}$

1112. $1+\cfrac{1}{1+\cfrac{1}{1+\cfrac{1}{26+\cfrac{1}{1+\frac{1}{3}}}}}$

1113.

$$\cfrac{1}{1+\cfrac{1}{1+\cfrac{1}{8+\cfrac{1}{5+\cfrac{1}{1+\frac{1}{2}}}}}}$$

1114.

$$\cfrac{1}{1+\cfrac{1}{1+\cfrac{1}{89+\cfrac{1}{1+\cfrac{1}{2+\cfrac{1}{1+\frac{1}{2}}}}}}}$$

1115.

$$1+\cfrac{1}{1+\cfrac{1}{2+\cfrac{1}{12+\cfrac{1}{1+\cfrac{1}{2+\cfrac{1}{1+\frac{1}{3}}}}}}}$$

1116.

$$\cfrac{1}{2+\cfrac{1}{1+\cfrac{1}{1+\cfrac{1}{3+\cfrac{1}{5+\cfrac{1}{1+\cfrac{1}{5+\frac{1}{3}}}}}}}}$$

1117. $1+\cfrac{1}{1+\cfrac{1}{2+\cfrac{1}{1+\cfrac{1}{2+\cfrac{1}{1+\cfrac{1}{2+\frac{1}{3}}}}}}}$

1118. $1+\cfrac{1}{1+\cfrac{1}{1+\cfrac{1}{1+\cfrac{1}{2+\cfrac{1}{2+\cfrac{1}{2+\frac{1}{5}}}}}}}$

1119. $\cfrac{1}{2+\cfrac{1}{2+\cfrac{1}{1+\cfrac{1}{2+\cfrac{1}{2+\cfrac{1}{4+\cfrac{1}{2+\cfrac{1}{1+\frac{1}{2}}}}}}}}}$

1120. $\cfrac{1}{2+\cfrac{1}{4+\cfrac{1}{2+\cfrac{1}{5+\cfrac{1}{1+\cfrac{1}{2+\cfrac{1}{1+\cfrac{1}{1+\frac{1}{2}}}}}}}}}$

1121. $\cfrac{1}{1+\cfrac{1}{1+\cfrac{1}{4+\cfrac{1}{1+\cfrac{1}{3+\cfrac{1}{1+\cfrac{1}{5+\cfrac{1}{3+\frac{1}{2}}}}}}}}}$

1122. $2+\cfrac{1}{2+\cfrac{1}{2+\cfrac{1}{2+\cfrac{1}{1+\cfrac{1}{1+\cfrac{1}{1+\cfrac{1}{3+\cfrac{1}{3+\cfrac{1}{3+\frac{1}{4}}}}}}}}}}$

1123.

$$3+\cfrac{1}{1+\cfrac{1}{1+\cfrac{1}{1+\cfrac{1}{1+\cfrac{1}{2+\cfrac{1}{2+\cfrac{1}{2+\cfrac{1}{2+\cfrac{1}{1+\cfrac{1}{2+\cfrac{1}{3+\frac{1}{4}}}}}}}}}}}$$

1124.

$$1+\cfrac{1}{1+\cfrac{1}{1+\cfrac{1}{a}}}$$

1125.

$$a+\cfrac{1}{1+\cfrac{1}{1+\cfrac{1}{1+\frac{1}{a}}}}$$

1126.

$$a^3+\cfrac{1}{b+\cfrac{1}{a^2+\cfrac{1}{b^2+\frac{1}{b^3}}}}$$

1127.

$$a+\cfrac{1}{a+\cfrac{1}{a^2+\frac{1}{a^3}}}$$

1128.

$$a^4+\cfrac{1}{a^3+\cfrac{1}{a^2+\frac{1}{a}}}$$

1129.

$$2a+\cfrac{1}{3b+\cfrac{1}{3a+\frac{1}{2b}}}$$

1130. $$a^2 + b^2 + \cfrac{1}{a^2 - b^2 + \cfrac{1}{a^2 - b^2 + \cfrac{1}{a^2 + b^2 + \cfrac{1}{a^2 - b^2}}}}$$

1131. $$a^2 - b^2 + \cfrac{1}{a^2 + b^2 + \cfrac{1}{a^2 + b^2 + \cfrac{1}{a^2 - b^2 + \cfrac{1}{a^2 - b^2}}}}$$

1132. $$a^3 - b^3 + \cfrac{1}{a + \cfrac{1}{a^3 + b^3 + \cfrac{1}{a^2 + \cfrac{1}{a^6 + b^6}}}}$$

1133. $\frac{34}{13}$. **1134.** 3,233. **1135.** 0,00037.

1136. 0,00287. **1137.** 23,387.

1138. $\frac{2216666}{599241}$. **1139.** 0,7333. **1140.** $\frac{323}{112546}$.

1141. $\frac{28598582}{892861}$. **1142.** $\frac{81435825523}{11484956422}$.

1143. $\frac{a^{13}+a^{12}+a^{10}+a^8+a^6+a^5+a^3+a}{a^{10}+a^7+a^5+a^3+1}$. **1144.** $\frac{3a^{10}+4a^5+1}{3a^5+2}$.

1145. $\frac{18a^8+15a^7+21a^6+17a^5+10a^4+6a^3+2a^2+a}{18a^6+15a^5+15a^4+14a^3+5a^2+3a+1}$.

1146. $\frac{a^4(a+1)+2a^2(a-1)}{a^2(a+1)^2+2a^2-1}$. **1147.** $\frac{a^2(a^2-1)(a^2+3)+2a^2-1}{a^2(a-1)(a^2+2)}$.

1148. $$\frac{\left\{a^6\left\{a^4+1\right\}+a^2\left\{a^2-1\right\}+1\right\}(a^4+b^4)+a^2(a^4-1)+2a^2}{a^2\left\{a^4(a^2+1)+a^2+1\right\}(a^4+b^4)+a^2(a^2+1)+1}.$$

1149. $\dfrac{a^{16}+2a^{11}+a^7+3a^6+2a^5-2a^4+a^2+4}{a^{13}+a^{10}+a^8+a^7-a^6+2a^4+a^2-1}$.

1150. $\dfrac{\left\{(a^4-b^4)\left\{(a^2-b^2+1)(a^6-b^6+1)+a^3-b^3\right\}+(a^2-b^2)(a+b+1)(a^6-b^6+1)+(a^3-b^3)(a^3+a^2+a+b^3+b^2+b)+1\right\}}{(a-b)(a^4+a-b^4+b+1)(a^6-b^6+1)+(a^3-b^3)\left\{(a^2+b^2)(a-b)+1\right\}}$.

1151. $\dfrac{\left\{(a^5+b^5)\left\{(a^4+1)\left\{(a^4-1)\left\{a^3\left\{a^4(a^5-1)+1\right\}+a^5-1\right\}+\left\{a^4(a^5-1)+1\right\}\right\}+\left\{a^3\left\{a^4(a^5-1)+1\right\}+a^5-1\right\}\right\}+a^8(a^7+1)+a^4(a^4+1)\right\}}{a^{11}+a^8(a^7+1)(a^5-1)+(a^4+1)\left\{a^4(a^5-1)+1\right.}$.

1152. $\dfrac{\left\{(a^4-15)\left\{\left\{a^2(a^6-81)+(a^3+9)(a+1)\right\}+a^2\right\}+(a^2-4)\left\{\left\{(a^6-81)(a-1)+a^3+9\right\}+a-1\right\}\right\}}{\left\{(a^2+4)\left\{a^2(a^6-81)+(a^3+9)(a+1)\right\}+a^2\right\}+(a^3+9)\left\{(a^3-9)(a-1)+1\right\}+a-1\}}$.

1153. $\dfrac{\left\{\left\{(a^2-8)(a^4-80)+(a+3)^2(a-3)\right\}\left\{3(3a^2-1)(10-4a^2)+(3a+2)(3-2a)\right\}+\left\{(a^4-80)(a-3)+a^2-9\right\}\left\{3(3a^2-1)(2a+3)+3a+2\right\}\right\}}{\left\{(\quad-80)\left\{(a^2-8)\left\{(3a-2)(10-4a^2)+3-2a\right\}+(a-3)\left\{(3a-2)\times(3+\quad+1\right\}\right\}+(a^2-9)\left\{(3a-2)\left\{(10-4a^2)(a+3)+3+2a\right\}+(3-2a)\times(a+3)+1\right\}\right\}}$.

1154. $\dfrac{29720}{2461}$.

1155. $\dfrac{1807}{16485}$.

1156. $\dfrac{29957}{7312}$.

1157. $\dfrac{7757}{1010}$.

1158. $\dfrac{197}{72}$.

1159. $\dfrac{736}{269}$.

1160. $\dfrac{a^{18}+a^5+a^7}{a^{11}+1}$ **1161.** $\dfrac{a^2b^2\left\{a^2b^2+3\right\}+1}{b^2\left\{a^2b^2+2\right\}}$

1162. $\dfrac{a^{25}+a^{12}+a^{14}+a^{16}+a^3+a^{18}+a^5+a^7}{a^{18}+a^7+a^9+a^{11}+1}$.

1163. $\dfrac{29a^3+12}{29}$. **1164.** $\dfrac{87a^6+101a^3+27}{87a^3+65}$

1165. $\dfrac{290a^6+527a^3+86}{290a^3+207}$

1166.
$$x=1+\cfrac{1}{4+\cfrac{1}{2+\cfrac{1}{1+\cfrac{1}{8+\cfrac{1}{1+\cfrac{1}{2+\cfrac{1}{4+\cfrac{1}{2+\frac{1}{x}}}}}}}}}$$

1167.
$$x=1+\cfrac{1}{1+\cfrac{1}{1+\cfrac{1}{1+\cfrac{1}{5+\cfrac{1}{1+\cfrac{1}{8+\cfrac{1}{4+\cfrac{1}{45+\cfrac{1}{4+\cfrac{1}{8+\cfrac{1}{1+\cfrac{1}{5+\frac{1}{x}}}}}}}}}}}}$$

1168. $\frac{11909119}{7218850}$.

1169. $$x = 3 + \cfrac{1}{2 + \cfrac{1}{3 + \cfrac{1}{2 + \cfrac{1}{1 + \cfrac{1}{1 + \cfrac{1}{2 + \cfrac{1}{x}}}}}}}$$

1170. $\frac{547}{101}$.

1171. $$-x = \cfrac{1}{2 + \cfrac{1}{1 + \cfrac{1}{1 + \cfrac{1}{2 + \cfrac{1}{3 + \cfrac{1}{2 + \cfrac{1}{3 - x}}}}}}}$$

1172. $$x = 2 + \cfrac{1}{2 + \cfrac{1}{1 + \cfrac{1}{2 + \cfrac{1}{2 + \cfrac{1}{5 + \cfrac{1}{1 + \cfrac{1}{11 + \cfrac{1}{1 + \cfrac{1}{5 + \cfrac{1}{x}}}}}}}}}}$$

$$-x=\cfrac{1}{5+\cfrac{1}{1+\cfrac{1}{11+\cfrac{1}{1+\cfrac{1}{5+\cfrac{1}{2+\cfrac{1}{2+\cfrac{1}{1+\cfrac{1}{2+\cfrac{1}{2-x}}}}}}}}}}$$

1173. 1.° $5x^2-18x-15=0.$

2.° $$-x=\cfrac{1}{1+\cfrac{1}{2+\cfrac{1}{3+\cfrac{1}{4-x}}}}.$$

1174. 1.° $13x^2-39x-17=0.$

2.° $$-x=\cfrac{1}{2+\cfrac{1}{1+\cfrac{1}{1+\cfrac{1}{2+\cfrac{1}{3-x}}}}}.$$

1175. 1.° $949x^2-949x-589=0.$

2.° $$-x=\cfrac{1}{2+\cfrac{1}{3+\cfrac{1}{4+\cfrac{1}{4+\cfrac{1}{3+\cfrac{1}{2+\cfrac{1}{1-x}}}}}}}.$$

1176. 1.° $x = \cfrac{1}{3+\cfrac{1}{1+\cfrac{1}{1+\cfrac{1}{1+\cfrac{1}{2+\cfrac{1}{1+\frac{1}{8}+\cdots\cdots}}}}}}$ 2.° $r = \frac{96}{349}$.

1177. 1.° $8+\cfrac{1}{2+\cfrac{1}{1+\cfrac{1}{2+\cfrac{1}{1+\cfrac{1}{2+\cfrac{1}{16+\cdots\cdots}}}}}}$ 2.° $r = \frac{4108}{491}$.

1178. 1.° $11+\cfrac{1}{11+\cfrac{1}{22+\cfrac{1}{11+\cdots\cdots}}}$ 2.° $r = \frac{29767}{2684}$.

1179. $x = \frac{17665}{12264}$. **1180.** $x = \frac{5819}{6521}$.

1181. $x = \frac{63897}{40298}$.

1182. La reducida que se pide es la *undécima*.

1183. La décima reducida cumple con la condicion que se pide

1184. *La cuarta.* **1185.** *La séptima.*

1186. $\cfrac{1}{4+\cfrac{1}{3+\cfrac{1}{1+\cdots\cdots}}}$ **1187.** $\cfrac{1}{2+\cfrac{1}{1+\cfrac{1}{4+\cdots\cdots}}}$

1188. $\cfrac{1}{1+\cdots\cdots}$ **1189.** $1+\cfrac{1}{2+\cfrac{1}{1+\cdots\cdots}}$

Coordinaciones, Permutaciones y combinaciones

1190. 89513424000. **1191.** 1700755056000.

1192. 30613591008000. **1193.** 4475671200.

1194. 213127200. **1195.** 9687600.

1196. 421200. **1197.** 17550. **1198.** 702.

1199. *ae; ai; ao; au; ea; ia; oa; ua; ei; eo; eu; io; iu; ou; ie; oe; ue; oi; ui; uo.*

1200. *aei; aeo; aeu; aie; aio; aiu; aoe; aoi; aou; aue; aui; auo; eia; eio; eiu; eoa; eoi; eou; eua: eui; euo; eai; eao; eau; ioa; ioe, iou; iua; iue; iuo; iae; iao; iau; iea; ieo; ieu; oua; oue; oui; oae; oai; oau; oea; oei; oeu; oia; oie; oiu; uae; uai; uao; uea; uei; ueo; uia; uie; uio; uoa; uoe; uoi.*

1201. *abc abd abe abf abg abh acb acd ace acf acg ach adb adc ade adf adg adh aeb aec aed aef aeg aeh afb afc afd afe afg afh agb agc agd age agf agh ahb ahc ahd ahe ahf ahg bca bcd bce bcf bcg bch bda bdc bde bdf bdg bdh bea bec bed bef beg beh bfa bfc bfd bfe bfg bfh*

bga bgc bgd bge bgf bgh bha bhc bhd
bhe bhf bhg cda cdb cde cdf cdg cdh
cea ceb ced cef ceg ceh cfa cfb cfd cfe
cfg cfh cga cgb cgd cge cgf cgh cha
chb chd che chf chg dea deb dec def
deg deh dfa dfb dfc dfe dfg dfh dga
dgb dgc dge dgf dgh dha dhb dhc dhe
dhf dhg efa efb efc efd efg efh ega egb
egc egd egf egh eha ehb ehc ehd ehf ehg
fga fgb fgc fgd fge fgh fha fhb fhc fhd
fhe fhg gha ghb ghc ghd ghe ghf bac
bad bae baf bag bah cab cad cae caf
cag cah dab dac dae daf dag dah eab
eac ead eaf eag eah fab fac fad fae fag
fah gab gac gad gae gaf gah hab hac
had hae haf hag cba cbd cbe cbf cbg
cbh dba dbc dbe dbf dbg dbh eba ebc ebd
ebf ebg ebh fba fbc fbd fbe fbg fbh hba
hbc hbd hbe hbf hbg dca dcb dce dcf
dcg dch eca ecb ecd ecf ecg ech fca fcb
fcd fce fcg fch gca gcb gcd gce gcf gch
hca hcb hcd hce hcf hcg eda edb edc
edf edg edh fda fdb fdc fde fdg fdh
gda gdb gdc gde gdf gdh hda hdb hdc
hde hdf hdg fea feb fec fed feg feh
gea geb gec ged gef geh hea heb hec hed
hef heg gfa gfb gfc gfd gfe gfh hfa
hfb hfc hfd hfe hfg hga hgb hgc hgd
hge hgf gba gbc gbd gbe gbf gbh.

1202. 362880. **1203.** 40320. **1204.** 5040.

1205. 720. **1206.** 120. **1207.** 24.

1208. 6. **1209.** 2.

1210. 10888869450418352160768000000.

1211. 43949268. **1212.** 2555190.

1213. 117480. **1214.** 4005.

Logarïtmos.

1215. 4,8839055. **1216.** 4,7542642.

1217. 4,9521480. **1218.** 5,5386718.

1219. 5,8971448. **1220.** 5,7349710.

1221. 4,9946031. **1222.** 5,98819406.

1223. 5,3701947. **1224.** 6,6014083.

1225. 6,9358125. **1226.** 6,5859789.

1227. 6,9946050. **1228.** 6,8971450.

1229. 6,0915147. **1230.** 7,4195578.

1231. 7,8900549. **1232.** 7,4455504.

1233. 7,8974370. **1234.** 7,8683913.

1235. 7,7568145. **1236.** 9,0530263.

1237. 9,3540563. **1238.** 2,5347455.

1239. 2,9906293. **1240.** 1,4288355.

1241. $\bar{4}$,8970770 ó sea —3,1029230.

1242. $\bar{3},9747474$; $-2,0252526$.

1243. 1,3775604. **1244.** 0,59068185.

1245. $\bar{3},9531585$. **1246.** $-0,5287306$.

1247. $-0,3236413$. **1248.** $-1,3348963$.

1249. $-1,1787285$. **1250.** $-0,8575292$.

1251. $-0,3293643$. **1252.** $-1,0318887$.

1253. $-3,0270578$. **1254.** $-3,0576488$.

1255. $-2,3374342$. **1256.** $-4,6382331$.

1257. 4,91998 48857 36052 00850.

1258. 5,06890 42022 20231 52554.

1259. 5,57215 40321 77764 55109.

1260. 6,92461 23960 48559 95137.

1261. 7,02908 75641 49662 01725.

1262. 10,92559 67952 18145 56655.

1263. 9,37424 33432 46119 31220.

1264. 9,17543 83199 66917 85434.

1265. 10,75966 76630 64585 85553.

1266. 14,06634 82459 55918 68779.

1267. $\bar{1},76700$ 61128 32288 80305.

1268. $\bar{2}$,07075 69034 29898 39766.

1269. $\bar{1}$,51316 93354 91548 76564.

1270. $\bar{1}$,19015 33249 01710 50822.

1271. $\bar{1}$,93440 27175 14186 76273.

1272. 13,82604 68557 19161 04518.

1273. 13,82719 89814 19391 52613.

1274. 16,12978 93128 11706 04672.

1275. 16,12975 99576 59883 35692.

1276. 11,69920 77536 61618 83319.

1277. 11,91245 85131 28176 95141.

1278. 12,20683 73530 66820 53480.

1279. 0,3562072. **1280.** 0,5645750.

1281. 0,8270875. **1282.** 1,1291501.

1283. —1,1343149. **1284.** —2,2317608.

1285. —4,4604897. **1286.** —0,0686216.

1287. —0,0981830. **1288.** —0,0784604.

1289. Log. 7509,878. **1290.** Log. 1568,461.

1291. Log. 157,84742. **1292.** Log. 881,8226.

1293. Log. 14211432,7868.

1294. Log. 2864094078,947.

1295. Log. 188646652173,913.

1296. Log. 32676360902255,639.

1297. Log. 100693795785780669,81.

1298. Log. 125921,5652.

1299. Log. 0,16724585.

1300. Log. 0,023691508.

1301. Log. 0,00101332.

1302. Log. 0,01000013.

1303. Log. 0,000338846.

1304. Log. 0,0001008093.

1305. Log. 0,2005519. **1306** Log. 0,131923.

1307. Log. 0,001003069.

1308. Log. 0,0000342659.

1309. Log. $\frac{4000}{38065}$. **1310.** Log. $\frac{100000}{129489}$.

1311. Log. $\frac{4400000}{4388421}$. **1312.** Log. $\frac{19000}{454651}$.

1313. Log. $\frac{4200}{2165391}$. **1314.** Log. $\frac{52}{458501}$.

1315. Log. $\frac{1660}{4351539}$. **1316.** Log. $\frac{1380}{2175063}$.

1317. Log. $\frac{119}{435448066}$. **1318.** Log. $\frac{106}{10865701}$.

1319. L. 67. **1320.** L. 95.

1321. L. 115. **1322.** L. 45.

1323. L. 7. **1324.** L. 2,7302409804.

1325. L. 7,42191 66283.

1326. L. 20,18006 97463.

1327. L. 54,86479 87532.

1328. L. 149,15708 31492.

1329. L. 148,41401 52901.

1330. L. 20,08666 17261.

1331. L. 148,43969 70602.

1332. L. 235,73920 18577.

1333. L. 573,70122 93359.

1334. Log. 542,90775.

1335. Log. 106,23154.

1336. Log. 19985,2718894.

1337. Log. 51667131.

1338. Log. 838975,192.

1339. Log. 7,28213. **1340.** Log. 1,0047359.

1341. Log. 1,000768. **1342.** Log. $\frac{1850000}{4559451}$.

1343. Log. $\frac{590000}{4584519}$. **1344.** Log. $\frac{1520}{455097}$.

1345. $\text{Log}\,\frac{135}{310559}$. **1346.** $\text{Log}.\,\frac{785}{2166178}$.

1347. $\text{Log}.\,\frac{129}{2168845}$. **1348.** $\text{Log}.\,\frac{76}{10862065}$.

1349. $3m\,.\,\log.\,a+4m.\,\log.\,b+8mn.\,\log.\,c.$

1350. $p\,\{\log.\,7+m.\,\log.\,a+mn.\,\log.\,b+nq.\,\log.\,c\}.$

1351. $\frac{p.\,\log\,a+2pq.\,\log.\,b+5qp.\,\log.\,c}{mn}$.

1352. $n^2.\,\log.\,a+m^2n^3.\,\log.\,b+m^3n^4.\,\log.\,c.$

1353. $mn\{m^{n}.\,\log.\,a+n^{p}.\,\log.\,b+p^{q}\,.\,\log.\,c\}.$

1354. $\frac{7}{n}\{3.\,\log.\,a+2.\,\log.\,b+m.\,\log.\,c\}-\frac{r}{q}\{7.\,\log.\,a+2.\,\log.\,b+3.\,\log.\,c\}.$

1355. $\frac{m.\,\log.\,a+n.\,\log.\,b}{3}-\{m.\,\log.\,a+n.\,\log.\,b+\frac{r.\,\log.\,a+s.\,\log.\,b}{p}\}.$

1356. $\frac{4}{21}\,.\,\log.\,\{a-b\}-2\,\{\log.\,a+\log.\,b\}.$

1357. $\text{Log}.\,a+\log.\,b-0{,}7\cdot\log.\,\{a+b\}-\frac{13}{15}\cdot\log.\,\{a-b\}.$

1358. $\frac{153}{21}\cdot\log.\,\{a-b\}+\frac{8}{21}\cdot\log.\,\{a+b\}-3{,}2.\,\log.\,\{a^3-b^3\}.$

1359. 17,7381827. **1360.** 15,0514998.

1361. 93,9640696. **1362.** 100,3991501.

1363. 2982,6970077. **1364.** 1,2744567.

1365. 0,8474014. **1366.** 0,3824265.

1367. 0,43431061. **1368.** —1,059810300.

1369. —1,94698666. **1370.** 23,572449901.

1371. 11,23316628. **1372.** 26,830306609.

1373. 0,54722 8849. **1374.** 45,994500691.

1375. 4,58343 1747. **1376.** —18,781741212.

1377. —38,297737300.

Razones y proporciones.

1378. $a^2|a-1|$. **1379.** $2|a^3-8|$. **1380.** 14.

1381. $2|a^2-1|$. **1382.** —2.

1383. $a^4|a-1|-2b+5$.

1384. $2|a^3-3a^2b+b^3|$. **1385.** $4ab$.

1386. $2b|2a+b|$. **1387.** $a|a+1|^2$.

1388. $\sqrt[3]{\frac{|a-b|^3}{|a+b|}}\,|a-b|$. **1389.** $\sqrt[4]{a+b}$.

1390 $\sqrt[9]{|a+b|^2|a-b|^3}$. **1391.** $\sqrt[4]{\frac{a-1}{a^2+a+1}}$.

1392. $a-1$. **1393.** $a-1$. **1394.** $\frac{(a+b)(a^2+b^2)}{a^2+ab+b^2}$.

1395. $\frac{a^4+5a^3+25a^2+125a+625}{a+5}$. **1396.** a^2+1.

1397. a^5+7. **1398.** a^2+ab+b^2.

1399. $\sqrt{a^5+1}$. **1400.** $\sqrt[4]{a^6-2a^5+1}$.

1401. $\sqrt[6]{\frac{(a^{10}+2a^8b^2-2a^7b^3+a^6b^4-4a^5b^5+a^4b^6-2a^3b^7+2a^2b^8+b^{10})}{(a^3-b^3)^2}}$.

1402. $x=a-2$. **1403.** $x=1+a+a^2-a^3$.

1404. $x=2a^2-a^3-1$. **1405.** $x=-a^2-b^2$.

1406. $x=a^5-a^4-a^2+10$. **1407.** $x=33-a^3$.

1408. $x=-5a^5-3b^2$. **1409.** $x=3\{1-a^2\}$.

1410. $x=\frac{a^2b^2(a+b)}{2}$. **1411.** $x=a^2$.

1412. $x=0$. **1413.** $x=\frac{a^6+a^4(1-3b)+a^2b(3b+2)+b^2(1-b)}{2}$.

1414. $x=a^6b$. **1415.** $x=a^2b^2$.

1416. $x=\frac{(a-b)^2(a^2+ab+b^2)}{a+b}$.

1417. $x=\frac{b^2(3a^2-2b^2)(3-4b)}{a(2a-3b)}$.

1418. $x=\frac{a-b^2}{a^2-b}\sqrt{a+b}$.

1419. $x=\sqrt[30]{\frac{(a^2+b^2)^6(a+b)^{16}}{(a-b)^{16}}}$. **1420.** $x=\sqrt[20]{\frac{(a^2+b^2)^5(2a^2-3b^2)^4}{(5a^3+3b^2)^{16}}}$

1421. $x=\frac{12a^5+15a^3b^2+20a^2b^3+25b^5}{3a^2-5b^3}$.

1422. $x=\frac{a^{11}+a^7b^4+3a^4b^7+3b^{11}}{2a^5-3b^3}$.

1423. $x=25a^4-15a^3b+15ab^2-9b^3.$

1424. $x=3a^4+2a^3d+21ab+14bd.$

1425. $x=2a^7-2a^5-7a^2b^3+7b^3.$

1426. $x=8a^3+36a^2b+54ab^2+27b^3.$

1427. $x=\{2a^3+3b^2\}^4.$

1428. $x=\sqrt{72a^8-40a^5b^5-27a^3b^9+15b^{14}}.$

1429. $x=\sqrt[12]{\{a^2-b^2\}^2\{a-b\}}.$

1430. $x=\sqrt[15]{\{a^2-b^2\}^4}.$

1431. $x=\sqrt[30]{\{a^4-b^4\}^3\{a^2-b^2\}^2}.$

Progresiones.

1432. $u=31a-12b.$ **1433.** $u=30a-65b.$

1434. $u=5\frac{2}{3}a+b.$ **1435.** $u=7a-4\frac{5}{7}b.$

1436. $u=30\frac{5}{7}a+42\frac{2}{5}b.$

1437. $u=42\frac{7}{9}a-11\frac{2}{5}b.$

1438. $u=35\frac{4}{5}a-49\frac{5}{7}b.$

1439. $u=35{,}5a+28{,}05b.$

1440. $u=2,6a-3,3b$. **1441.** $u=12,5a-8,65b$.

1442. $u=3a-59b$. **1443.** $u=28a^2-36b^3$.

1444. $p=a^2-1$. **1445.** $p=a-1$.

1446. $p=3a^2-5b$. **1447.** $p=a^2-1$.

1448. $p=a^2-b^2$. **1449.** $p=a^3-b^3$.

1450. $p=3a^2-4b$. **1451.** $p=5a^2b+4c^3$.

1452. $p=\frac{3}{5}a^3b^4-\frac{2}{3}c^3d^2$.

1453. $p=7a^7b^3-0,5c^4d^3$.

1454. $r=1,2\{a^3-b^3\}$. **1455.** $r=\frac{13}{11}\{a^3-3b^2\}$.

1456. $r=\frac{15}{13}\{0,5a^3b^2+9c^3d^4\}$.

1457. $r=\frac{9}{8}\{d^7-a^9b^3\}$.

1458. $r=\frac{10}{9}\{a^6d^3-b^4c^6\}$. **1459.** $r=\frac{21}{19}\{b^7-a^9\}$.

1460. $r=1,1\{8-a^3b^4c^3+d^7f^6\}$.

1461. $r=\frac{69a^2+115c^3}{21}$.

1462. $r=\frac{25}{23}\{3a^2-5b^4\}$.

1463. $r=\frac{12}{11}\{7a^2-9c^3d^4\}$.

1464. $s=\{1+10a^3\}21$. **1465.** $s=11a^6\{a+10\}$.

1466. $s=\{3a-1\}5$. **1467.** $s=\{8a^2-b^2+7\}15$.

1468. $s=\{35b^3-350a^2\}4$. **1469.** $s=434b^5c^2$.

1470. $s=10\{6a^2+19a+95b^2\}$.

1471. $s=\{3a^3+b^4+30c^3+42d^4\}13$.

1472. $r=\frac{a^3-b^2}{7}+\frac{b^4-a^5}{105}$; $p=b^2-a^3+\frac{2(a^5-b^4)}{15}$.

1473. $r=\frac{21}{190}\{a^5-b^5\}$; $p=\frac{11(b^5-a^5)}{10}$.

1474. $r=\frac{5a^3b^2+7c^3}{9}-\frac{a^7+b^7}{171}$;

$p=-5a^3b^2-7c^3+\frac{2}{19}\{a^7+b^7\}$.

1475. $r=\frac{49a^4b^{10}+35c^{10}d^4}{21}-\frac{1}{42}$;

$p=\frac{1}{7}-\{7a^4b^{10}+5c^{10}d^4\}$.

1476. $r=\frac{71-10a^3}{110}$; $p=\frac{10a^3-45.5}{11}$.

1477. $p=\frac{2a^4-2b^4-253a^7+1518b^2}{46}$; $u=\frac{2a^4-2b^4+253a^7-1518b^2}{46}$.

1478. $p=\frac{a^4b^2-136a^3+680ab-136b^5}{17}$;

$u=\frac{a^4b^2-680ab+136(a^3+b^5)}{17}$.

1479. $p=\frac{a^4-500a^3+3a^2b-2400ab+b^3-1500}{25}$;

$u=\frac{a^4+3a^2b+b^3+500a^3+2400ab+1500}{25}$.

1480. $p=\frac{159-693a^4}{22}$; $u=\frac{9(77a^4-8)}{22}$.

1481. $p=\frac{15+a^2-234a^4-546a^5}{15}$; $u=\frac{15+a^2+234a^4+546a^5}{15}$.

$$n=\frac{6+a^3\pm\sqrt{a^6-4(a^3+20a^2+16a-5)}}{8};$$

1482.

$$p=4\mp\sqrt{a^6-4\{a^3+20a^2+16a-5\}}.$$

$$n=\frac{3(8a-1)\pm\sqrt{1088a^2-144a-63}}{16a+6};$$

1483.

$$p=\frac{-8a+3\mp\sqrt{1088a^2-144a-63}}{2}.$$

$$n=\frac{3a^3+9b\pm\sqrt{1350a^3b-191a^6-1599b^2}}{2a^3-10b};$$

1484.

$$p=\frac{a^3-5b\mp\sqrt{1350a^3b-191a^6-1599b^2}}{2}.$$

$$n=\frac{55+3a^2-18a^4\pm\sqrt{2985+306a^2-1931a^4-84a^6+324a^8}}{10+6a^2};$$

1485.

$$p=\frac{5+3a^2\mp\sqrt{2985+306a^2-1931a^4-84a^6+324a^8}}{2}.$$

1486.

$$p=31a^2-27b^5-12b^2;$$
$$s=\{37a^2-27b^5-6b^2\}13.$$

1487. $p=63a^{13}b+90cd^{13}$; $s=\{73a^{13}b+80cd^{13}\}21$.

1488. $p=-125a^3-19$; $s=-19\{62a^3+10\}$.

1489. $p=-35a^7-19b^4$; $s=30b^4$.

1490. $r=\frac{9a^3-56}{203}$; $u=\frac{65a^3-166}{29}$.

1491. $r=\frac{22b^4-154a^5}{171}$; $u=\frac{25b^4-61a^5}{19}$.

1492. $r=-\frac{133a^6+25b^3}{78}$; $u=-\frac{125a^6+24b^3}{13}$.

1493. $r=\frac{132-98a^4}{91}$; $u=\frac{128,5-49a^4}{7}$.

1494. $n=\frac{2a^4+6a^2b+2ab^2+2b^4}{47a^3+18}$; $r=\frac{(47a^3-8)(47a^3+18)}{2a^4-47a^3+6a^2b+2ab^2+2b^4-18}$.

1495. $n=\frac{2a^2+190}{4a^{11}+39}$; $r=\frac{(55-4a^{11})(39+4a^{11})}{2a^2-4a^{11}+151}$.

1496. $n=\frac{2a^7+2a^3-2b^2}{a^7+a^3+b^2+b}$; $r=\frac{(a^3-a^7-b+b^2)(a^7+a^3+b^2+b)}{a^7+a^3-3b^2-b}$.

1497. $n=\frac{42a^3+10}{45}$; $r=\frac{-45}{42a^3-35}$.

1498. $r=-\frac{a^5-2}{4}$; $s=\frac{13}{2}\{5a^5-8\}$.

1499. $r=\frac{a^2-3b^2}{5}$; $s=\{a^2-b^2\}22$.

1500. $r=\frac{10b^7-7a^5}{12}$; $s=\frac{(7a^5+12b^7)13}{2}$.

1501. $r=\frac{4b^2-b^3-9a^5+1}{26}$; $s=\frac{(9a^5+b^3+4b^2+1)27}{2}$.

1502. $n=\frac{1\pm 76}{7}$; $u=-7\pm 152$.

1503. $n=\frac{-5\pm 85}{4}$; $u=-2\pm 85$.

1504. $n=\frac{-3\pm 497}{26}$; $u=\frac{-13\pm 497}{2}$.

1505. $n=\frac{1\pm 89}{6}$; $u=\frac{-39\pm 1157}{2}$.

1506. $n=\frac{16\pm 3}{4(a^2+b^2+8)}$; $u=-\left\{a^2+b^2+8\mp\frac{3}{2}\right\}$.

1507. $n=\frac{a-5b\pm(65a+27b)}{2(3a+b)}$;
$u=-\frac{1}{2}\{3a+b\mp\{65a+27b\}\}$.

1508. $n=\frac{-3(5a+b)\pm(15a+91b)}{8b}$; $u=-4b\pm\{15a+91b\}$.

1509. $u=171$; $s=1547$.

1510. $u=-127$; $s=-1197$.

1511. $u=a^5+22a^4-b^4-22b^5$;
$s=\{a^5-b^4+11a^4-11b^5\}23$.

1512. $u=a^4-112a+133$; $s=\{a^4-56a+69\}17$.

1513. $n=30$; $s=3735$.

1514. $n=17$; $s=-459$.

1515. $n=21$; $s=\{a^3+10a^2-b^3-10b^2\}21$.

1516. $n=11$; $s=\{a^3+6b^2-5a\}11$.

1517. $u=3a^{14}+a^{12}b\{18b+5\}+15a^{10}b^3\{3b+2\}$
$+15a^8b^5\{4b+5\}+5a^6b^7\{9b+20\}+3a^4b^9\times$
$\{6b+25\}+3a^2b^{11}\{b+10\}+5b^{13}$.

1518. $u=-a^7b\{21b^{24}+1\}+7a^6b^6\{b^{24}+1\}$
$-a^5b^{11}\{b^{24}+21\}+a^4\{a^8+35b^{16}\}-7a^3b^5\times$
$\{a^8+5b^{16}\}+21a^2b^{10}\{a^8+b^{16}\}-7ab^{15}\times$
$\{5a^8+b^{16}\}+b^{20}\{35a^8+b^{16}\}$.

1519. $u=a+b\{a^{16}+8a^{14}b^2+28a^{12}b^4+56a^{10}b^6+$
$70a^8b^8+56a^6b^{10}+28a^4b^{12}+8a^2b^{14}+b^{16}\}$.

1520. $u=\{a^4-b^4\}\{a^{16}+b^{16}+8a^2b^2\{a^{12}+b^{12}\}+$
$28a^4b^4\{a^8+b^8\}+56a^6b^6\{a^4+b^4\}$
$+70a^8b^8\}$.

1521. $u=\{a^4-b^4\}^{11}$. **1522.** $p=a^5-b^5$.

1523. $p=a+b$. **1524.** $p=a^2+b^2$.

1525. $p=a^8-b$. **1526.** $p=\frac{a^3+b^5}{(a^5+b^3)^{14}}$.

1527. $p=\frac{a^{10}+a^9+a^8+a^7+a^6+a^5+a^4+a^3+a^2+a+1}{(a-1)^{11}}$

1528. $p=9\{a^7-3\}^{-18}$. **1529.** $p=\frac{27}{(a^3-8)^{16}}$.

1530. $q=\frac{1}{a^2+ab+b^2}$. **1531.** $q=\{a+b\}\{a-b\}^2$.

1532. $q=\frac{a+b}{a^5-b^5\left\{\sqrt[5]{(a^5-b^5)^2}\right\}}$.

1533. $q=\sqrt[3]{81a^3-b^3}$.

1534. $q=\{a^2-b^2\}\sqrt[8]{a+b}$. **1535.** $q=\sqrt[12]{\frac{a^3-b^3}{a^3+b^3}}$.

1536. $s=\{5a^7+4b^2\}\{\{a-b\}^{12}+\{a-b\}^{11}+\{a-b\}^{10}+\{a-b\}^9+\cdots\cdots+\{a-b\}^3+\{a-b\}^2+a-b+1\}$.

1537 $s=\{3a^2+7b^3\}\{\{5a^4-7b^2\}^{14}+\{5a^4-7b^2\}^{13}+\{5a^4-7b^2\}^{12}+\cdots\cdots+\{5a^4-7b^2\}^3+\{5a^4-7b^2\}^2+5a^4-7b^2+1\}$.

1538. $s=\{2a^3-3b^2\}\{\{a^7-1\}^{12}+\{a^7-1\}^{11}+\{a^7-1\}^{10}+\cdots\cdots+\{a^7-1\}^3+\{a^7-1\}^2+a^7\}$.

1539. $s=\{a^9-1\}\{\{b^5+1\}^{10}+\{b^5+1\}^9+\{b^5+1\}^8+\cdots\cdots+\{b^5+1\}^3+\{b^5+1\}^2+b^5+2\}$.

1540. $s=\frac{15}{16}81152\,814\,814\,814\,814\,814\,814\,814\,814\,814\,814\,814\,814\,814\,814\,813.$

1541. $s=\frac{7(9^{18}-7^{18})}{9^{17}}.$ **1542.** $s=\frac{17}{16}\times\frac{19^{59}-3^{59}}{19^{58}}.$

1543. $s=\frac{7(15^{33}-1)}{152}.$ **1544.** $s=\frac{7(9^{43}-5^{43})}{48\times 9^{42}}.$

1545.
$$p=\frac{a^3+3a^2b+b^3}{(a^3-b^2)^{10}+(a^3-b^2)^9+(a^3-b^2)^8+\cdots\cdots+(a^3-b^2)^3+(a^3-b^2)^2+a^3-b^2+1};$$
$$u=\frac{(a^3+3a^2b+b^3)(a^3-b^2)^{10}}{(a^3-b^2)^{10}+(a^3-b^2)^9+(a^3-b^2)^8+\cdots\cdots+(a^3-b^2)^3+(a^3-b^2)^2+a^3-b^2+1}.$$

1546.
$$p=\frac{a-b}{(a+b)^{23}+(a+b)^{21}+(a+b)^{19}+(a+b)^{17}+\cdots\cdots+(a+b)^5+(a+b)^3+a+b+(a+b)^{-1}};$$
$$u=\frac{(a-b)(a+b)^{24}}{(a+b)^{23}+(a+b)^{21}+(a+b)^{19}+(a+b)^{17}+\cdots\cdots+(a+b)^5+(a+b)^3+a+b+(a+b)^{-1}}.$$

1547.
$$p=\frac{4b^2-27}{(8a-5)^6+(8a-5)^5+(8a-5)^4+(8a-5)^3+(8a-5)^2+8a-4};$$
$$u=\frac{(4b^2-27)(8a-5)^6}{(8a-5)^6+(8a-5)^5+\cdots\cdots+(8a-5)^2+8a-4}.$$

1548.
$$p=\frac{18}{(8a^3-5b^3)^{16}+(8a^3-5b^3)^{15}+(8a^3-5b^3)^{14}+\cdots\cdots+(8a^3-5b^3)^3+(8a^3-5b^3)^2+8a^3-5b^3+1};$$
$$u=\frac{18(8a^3-5b^3)^{16}}{(8a^3-5b^3)^{16}+(8a^3-5b^3)^{15}+(8a^3-5b^3)^{14}+\cdots\cdots+(8a^3-5b^3)^3+(8a^3-5b^3)^2+8a^3-5b^3+1}.$$

1549. $p=\frac{(a-b)^2}{(a^3-1)^{12}};$ $S=\frac{(a-b)^2\{(a^3-1)^{13}-1\}}{(a^3-1)^{12}(a^3-2)}.$

$$p=\frac{4a^2-5b^3}{(5a^3-b^2)^{18}};$$

1550.
$$S=\frac{(4a^2-5b^3)\{(5a^3-b^2)^{18}+(5a^3-b^2)^{17}+(5a^3-b^2)^{16}+\cdots\cdots+(5a^3-b^2)^2+5a^3-b^2+1\}}{(5a^3-b^2)^{18}}$$

1551. $$p=\frac{41b^3-5}{30223145490365729367654 4a^{78}};$$

$$s=\frac{(41b^3-5)\left\{8^{26}a^{78}+8^{25}a^{75}+8^{24}a^{72}+\ldots\ldots+8^3a^9+8^2a^6+8a^3+1\right\}}{8^{26}a^{78}}.$$

1552. $$p=\frac{81}{(a^4-b^4)^{20}};$$

$$s=81\left\{1+\{a^4-b^4\}^{-1}+\{a^4-b^4\}^{-2}+\ldots\ldots\right.$$
$$\ldots\ldots+\{a^4-b^4\}^{-17}+\{a^4-b^4\}^{-18}+\{a^4-b^4\}^{-19}$$
$$\left.+\{a^4-b^4\}^{-20}\right\}.$$

1553. $$q=\sqrt[10]{\frac{a-1}{a+1}};\quad s=\frac{\{a-1\}\sqrt[10]{\frac{a-1}{a+1}}-\{a+1\}}{\sqrt[10]{\frac{a-1}{a+1}}-1}.$$

1554. $$q=\sqrt[30]{\frac{a^{29}}{a^3+5b^2}};\quad s=\frac{a^{29}\sqrt[30]{\frac{a^{29}}{a^3+5b^2}}-\{a^3+5b^2\}}{\sqrt[30]{\frac{a^{29}}{a^3+5b^2}}-1}.$$

1555. $$q=\frac{\sqrt[25]{17a^5(a^8-3b^5)^{24}}}{a^8-3b^5};\quad s=\frac{17a^5\sqrt[25]{17a^5(a^8-3b^5)^{24}}-(a^8-3b^5)^2}{\sqrt[25]{17a^5(a^8-3b^5)^{24}}-(a^8-3b^5)}.$$

1556. $$u=\{a^7-5\}\{b^6-3\}^{22};\quad s=\frac{(a^7-5)\left\{(b^6-3)^{23}-1\right\}}{b^6-4}.$$

1557. $$u=\{a^8-b^7\}\{b^5-3\}^{24};$$

$$s=\{a^8-b^7\}\left\{\{b^5-3\}^{24}+\{b^5-3\}^{23}+\right.$$
$$\left.\{b^5-3\}^{22}+\ldots\ldots+\{b^5-3\}^3+\{b^5-3\}^2+b^5-2\right\}.$$

1558.

$$u=\left\{\frac{a^{11}-43}{a^{96}}\right\}\{a^2b^3-5\}^{48};$$

$$s=\{a^{11}-43\}\left\{\left\{b^3-\frac{5}{a^2}\right\}^{48}+\left\{b^3-\frac{5}{a^2}\right\}^{47}+\left\{b^3-\frac{5}{a^2}\right\}^{46}+\ldots\ldots\right.$$
$$\left.\ldots\ldots+\left\{b^3-\frac{5}{a^2}\right\}^{3}+\left\{b^3-\frac{5}{a^2}\right\}^{2}+b^3-\frac{5}{a^2}+1\right\}.$$

1559.

$$u=\frac{(5a^{12}c^3-b^4)(a^3c^2-b^5)^{16}}{5b^{32}c^{35}};$$

$$s=\left\{\frac{5a^{12}c^3-b^4}{5c^3}\right\}\left\{\left\{\frac{a^3c^2-b^5}{b^2c^2}\right\}^{16}+\left\{\frac{a^3c^2-b^5}{b^2c^2}\right\}^{15}+\left\{\frac{a^3c^2-b^5}{b^2c^2}\right\}^{14}+\ldots\ldots\right.$$
$$\left.\ldots\ldots+\left\{\frac{a^3c^2-b^5}{b^2c^2}\right\}^{3}+\left\{\frac{a^3c^2-b^5}{b^2c^2}\right\}^{2}+\frac{a^3c^2-b^5}{b^2c^2}+1\right\}.$$

1560.

$$u=1334174535973332552;$$
$$s=1500946352969999120.$$

1561. $u=\frac{157837977}{1073741824}$; $s=\frac{46771126325}{1073741824}$.

1562. $u=\frac{1302730878328353592}{1651040988266990331}$; $s=\frac{5357811289950475784}{1651040988266990331}$.

1563.

$$u=\frac{381584866576276051840519372 8}{26597237748344155125808172689};$$
$$s=\frac{29291749672445407374861318052 8}{26597237748344155125808172689}.$$

FIN DE LOS EJERCICIOS DE ÁLGEBRA ELEMENTAL.

A pesar del esmero con que se ha hecho la impresion y corregido las pruebas, se han cometido las siguientes

ERRATAS.

PÁGINAS.	EJEMPLO.	TÉRMINO.	
10	**90**	3.°	sobra el signo }.
14	**136**	2.°	falta x como factor del polinomio que constituye este término.
29	**234**	.....	en el denominador del divisor dice $0,2b^{45}c$, y debe ser $0,2b^4c^3$.
41	**356**	3.°	en el denominador debe leerse $27b^4y^2$ en vez de $27q^4y^2$.
49	**407**	2.°	del dividendo en vez de $\sqrt{\ }$ debe ser $\sqrt[3]{\ }$.
79	**763**	.....	En el segundo miembro donde dice -2 debe decir $-2x$.
90	**863**	.....	El segundo miembro de la 5.ª ecuacion debe ser -6 en vez de 0 que pone.
91	**868**	.....	El segundo miembro de la primera ecuacion debe ser negativo, y los de las segunda y tercera $\frac{4127}{105}$ y $\frac{6591}{140}$ en vez de los que respectivamente se ponen.
91	**869**	.....	El segundo miembro de la tercera ecuacion debe ser 102,35; el de la cuarta $25\frac{5}{42}$; y el de la quinta 20,1365.
92	**871**	.....	El 4.° término del numerador del segundo miembro de la tercera ecuacion debe ser $-b^2$ en vez de $+b^2$.