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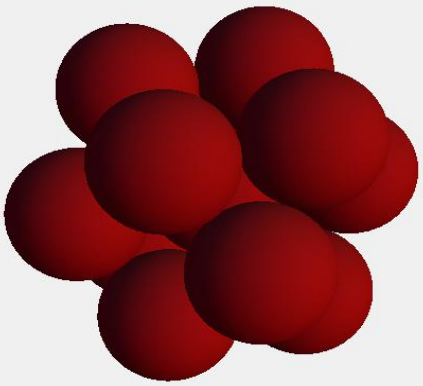
Reducción de fracciones

Reducción de fracciones algebraicas



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Contenido

Capítulo 1

Reducción de fracciones algebraicas

1.1. Reducir las siguientes expresiones algebraicas.

1. $\dfrac{\dfrac{a}{2b}+\dfrac{3b}{2a}}{\dfrac{a}{b}+\dfrac{3b}{2a}}$ Sol: $\dfrac{a^2+3b^2}{2a^2+3b^2}$.

2. $\dfrac{-\dfrac{a}{b}-\dfrac{2b}{a}}{\dfrac{a}{b}+\dfrac{b}{a}}$ Sol: $\dfrac{-a^2-2b^2}{a^2+b^2}$.

3. $\dfrac{\dfrac{3a}{b}-\dfrac{2b}{a}}{-\dfrac{a}{b}+\dfrac{2b}{3a}}$ Sol: -3.

4. $\dfrac{-\dfrac{a}{b}+\dfrac{b}{a}}{\dfrac{a}{2b}+\dfrac{b}{a}}$ Sol: $\dfrac{-2(a^2-b^2)}{a^2+2b^2}$.

5. $\dfrac{-\dfrac{2a}{b}+\dfrac{b}{2a}}{\dfrac{3a}{b}-\dfrac{b}{3a}}$ Sol: $\dfrac{-3(4a^2-b^2)}{2(9a^2-b^2)}$.

6. $\dfrac{-\dfrac{a}{b}+\dfrac{b}{a}}{\dfrac{a}{b}+\dfrac{2b}{a}}$ Sol: $\dfrac{-a^2+b^2}{a^2+2b^2}$.

7. $\dfrac{\dfrac{2a}{b}-\dfrac{2b}{3a}}{-\dfrac{a}{b}+\dfrac{b}{2a}}$ Sol: $\dfrac{-4(3a^2-b^2)}{3(2a^2-b^2)}$.

8. $\dfrac{\dfrac{3a}{b}-\dfrac{b}{a}}{-\dfrac{a}{b}+\dfrac{b}{a}}$ Sol: $\dfrac{-3a^2+b^2}{a^2-b^2}$.

9. $\dfrac{\frac{a}{b}+\frac{b}{a}}{-\frac{a}{b}+\frac{3b}{2a}}$ Sol: $\dfrac{-2(a^2+b^2)}{2a^2-3b^2}$.

10. $\dfrac{\frac{a}{3b}+\frac{b}{a}}{-\frac{2a}{3b}-\frac{b}{a}}$ Sol: $\dfrac{-a^2-3b^2}{2a^2+3b^2}$.

11. $\dfrac{\frac{2a}{3b}+\frac{2b}{3a}}{\frac{2a}{3b}+\frac{b}{a}}$ Sol: $\dfrac{2(a^2+b^2)}{2a^2+3b^2}$.

12. $\dfrac{\frac{2a}{3b}+\frac{2b}{3a}}{\frac{a}{4b}+\frac{2b}{a}}$ Sol: $\dfrac{8(a^2+b^2)}{3(a^2+8b^2)}$.

13. $\dfrac{-\frac{3a}{b}-\frac{2b}{a}}{\frac{7a}{3b}-\frac{b}{a}}$ Sol: $\dfrac{-3(3a^2+2b^2)}{7a^2-3b^2}$.

14. $\dfrac{\frac{a}{b}-\frac{3b}{2a}}{\frac{2a}{b}-\frac{7b}{2a}}$ Sol: $\dfrac{-2a^2-3b^2}{4a^2-7b^2}$.

15. $\dfrac{\frac{2a}{b}+\frac{b}{2a}}{\frac{2a}{3b}+\frac{7b}{5a}}$ Sol: $\dfrac{15(4a^2+b^2)}{2(10a^2+21b^2)}$.

16. $\dfrac{-\frac{3a}{2b}-\frac{2b}{a}}{\frac{6a}{5b}+\frac{b}{a}}$ Sol: $\dfrac{-5(3a^2+4b^2)}{2(6a^2+5b^2)}$.

17. $\dfrac{\frac{7a}{5b}-\frac{b}{2a}}{\frac{7a}{5b}+\frac{5b}{2a}}$ Sol: $\dfrac{14a^2-5b^2}{14a^2+25b^2}$.

18. $\dfrac{-\frac{7a}{2b}+\frac{b}{a}}{-\frac{a}{b}+\frac{4b}{3a}}$ Sol: $\dfrac{-3(7a^2-2b^2)}{2(3a^2-4b^2)}$.

19. $\dfrac{\frac{3a}{5b}-\frac{5b}{2a}}{-\frac{a}{2b}+\frac{3b}{a}}$ Sol: $\dfrac{-6a^2+25b^2}{5(a^2-6b^2)}$.

20. $\dfrac{-\frac{a}{3b}+\frac{5b}{2a}}{\frac{5a}{6b}+\frac{b}{a}}$ Sol: $\dfrac{-2a^2-15b^2}{5a^2+6b^2}$.

21. $\dfrac{\frac{3a}{2b}+\frac{b}{9a}}{\frac{2a}{9b}-\frac{3b}{2a}}$ Sol: $\dfrac{27a^2+2b^2)}{4a^2-27b^2}$.

22. $\dfrac{-\frac{2a}{9b}+\frac{b}{7a}}{-\frac{2a}{b}-\frac{2b}{7a}}$ Sol: $\dfrac{14a^2-9b^2}{18(7a^2+b^2)}$.

23. $\dfrac{-\frac{6a}{5b}-\frac{2b}{a}}{\frac{5a}{6b}-\frac{11b}{2a}}$ Sol: $-\dfrac{12(3a^2-5b^2)}{5(5a^2-33b^2)}$.

24. $\dfrac{\frac{3a}{2b}-\frac{11b}{8a}}{-\frac{5a}{8b}-\frac{7b}{9a}}$ Sol: $-\dfrac{9(12a^2-11b^2)}{45a^2+56b^2}$.

25. $\dfrac{\frac{12a}{11b}-\frac{b}{3a}}{\frac{7a}{5b}-\frac{11b}{a}}$ Sol: $\dfrac{5(36a^2-11b^2)}{33(7a^2-55b^2)}$.

26. $\dfrac{-\frac{3a}{10b}-\frac{3b}{2a}}{-\frac{7a}{8b}+\frac{7b}{2a}}$ Sol: $\dfrac{12(a^2+5b^2)}{35(a^2-4b^2)}$.

27. $\dfrac{\frac{8a}{3b}+\frac{2b}{a}}{-\frac{4a}{5b}-\frac{b}{2a}}$ Sol: $-\dfrac{20(4a^2+3b^2)}{3(8a^2+5b^2)}$.

28. $\dfrac{\frac{4a}{3b}+\frac{10b}{3a}}{-\frac{12a}{b}+\frac{8b}{3a}}$ Sol: $\dfrac{-2a^2-5b^2}{2(9a^2-2b^2)}$.

29. $\dfrac{-\frac{7a}{3b}-\frac{4b}{7a}}{\frac{9a}{2b}+\frac{5b}{3a}}$ Sol: $-\dfrac{2(49a^2+12b^2)}{7(27a^2+10b^2)}$.

30. $\dfrac{\frac{6a}{b}-\frac{5b}{3a}}{\frac{a}{9b}+\frac{4b}{9a}}$ Sol: $\dfrac{3(18a^2-5b^2)}{a^2+4b^2}$.

31. $\dfrac{-\frac{2a}{3b}+\frac{10b}{7a}}{\frac{10a}{5b}-\frac{b}{a}}$ Sol: $-\dfrac{10(7a^2-15b^2)}{21(11a^2-5b^2)}$.

32. $\dfrac{-\frac{a}{b}+\frac{2b}{7a}}{\frac{3a}{b}-\frac{5b}{2a}}$ Sol: $-\dfrac{2(7a^2-2b^2)}{7(6a^2-5b^2)}$.

33. $\dfrac{-\dfrac{9a}{8b}-\dfrac{b}{8a}}{\dfrac{2a}{3b}-\dfrac{3b}{4a}}$ Sol: $-\dfrac{3(9a^2+b^2)}{2(a^2-9b^2)}$.

34. $\dfrac{-\dfrac{a}{b}-\dfrac{7b}{6a}}{\dfrac{3a}{4b}-\dfrac{b}{10a}}$ Sol: $-\dfrac{10(6a^2+7b^2)}{3(15a^2-2b^2)}$.

35. $\dfrac{\dfrac{3a}{5b}-\dfrac{8b}{5a}}{-\dfrac{5a}{2b}+\dfrac{8b}{5a}}$ Sol: $-\dfrac{2(3a^2-8b^2)}{25a^2-16b^2}$.

36. $\dfrac{-\dfrac{9a}{8b}+\dfrac{4b}{5a}}{\dfrac{5a}{2b}-\dfrac{3b}{4a}}$ Sol: $\dfrac{-45a^2+32b^2}{10(10a^2-3b^2)}$.

37. $\dfrac{-\dfrac{a}{b}-\dfrac{b}{11a}}{\dfrac{6a}{b}-\dfrac{6b}{5a}}$ Sol: $-\dfrac{5(11a^2+b^2)}{66(5a^2-b^2)}$.

38. $\dfrac{\dfrac{9a}{4b}-\dfrac{b}{6a}}{\dfrac{3a}{8b}-\dfrac{8b}{9a}}$ Sol: $\dfrac{6(27a^2-2b^2)}{27a^2-64b^2}$.

39. $\dfrac{-\dfrac{5a}{9b}-\dfrac{5b}{6a}}{\dfrac{11a}{4b}+\dfrac{b}{3a}}$ Sol: $-\dfrac{2(8a^2+15b^2)}{3(33a^2+4b^2)}$.

40. $\dfrac{-\dfrac{3a}{b}-\dfrac{4b}{5a}}{\dfrac{4a}{b}-\dfrac{4b}{7a}}$ Sol: $-\dfrac{7(15a^2+4b^2)}{20(7a^2-b^2)}$.

41. $\dfrac{-\dfrac{1}{a}-\dfrac{2a}{3b}-\dfrac{b}{a}}{\dfrac{1}{b}-\dfrac{3a}{b}-\dfrac{b}{a}}$ Sol: $\dfrac{2a^2+3b+3b^2}{3(-a+3a^2+b^2)}$.

42. $\dfrac{-\dfrac{1}{a}-\dfrac{a}{2b}+\dfrac{3b}{4a}}{-\dfrac{1}{b}-\dfrac{2a}{3b}-\dfrac{b}{2a}}$ Sol: $-\dfrac{3(-2a^2-4b+3b^2)}{2(6a+4a^2+3b^2)}$.

43. $\dfrac{\dfrac{2}{a}-\dfrac{a}{b}-\dfrac{b}{3a}}{\dfrac{1}{b}+\dfrac{a}{2b}+\dfrac{3b}{4a}}$ Sol: $-\dfrac{4(3a^2-6b+b^2)}{3(4a+2a^2+3b^2)}$.

44. $\dfrac{-\dfrac{1}{a}-\dfrac{3a}{5b}+\dfrac{3b}{5a}}{\dfrac{2}{b}-\dfrac{a}{2b}-\dfrac{3b}{a}}$ Sol: $\dfrac{2(3a^2+5b-3b^2)}{5(-4a+a^2+6b^2)}$.

45. $\dfrac{-\frac{1}{a}-\frac{3a}{5b}-\frac{b}{a}}{-\frac{2}{b}-\frac{4a}{b}-\frac{5b}{3a}}$ Sol: $\dfrac{3(3a^2+5b+5b^2)}{5(6a+12a^2+5b^2)}$.

46. $\dfrac{-\frac{1}{a}-\frac{3a}{5b}-\frac{5b}{3a}}{\frac{2}{b}+\frac{5a}{b}+\frac{b}{5a}}$ Sol: $\dfrac{-9a^2-15b+25b^2}{3(10a+25a^2+b^2)}$.

47. $\dfrac{-\frac{2}{a}-\frac{2a}{b}-\frac{b}{4a}}{\frac{2}{b}+\frac{3a}{5b}-\frac{b}{a}}$ Sol: $\dfrac{5(8a^2+8b+b^2)}{4(-10a-3a^2+5b^2)}$.

48. $\dfrac{\frac{1}{a}+\frac{3a}{2b}-\frac{b}{a}}{\frac{1}{b}+\frac{2a}{3b}+\frac{3b}{4a}}$ Sol: $\dfrac{6(3a^2+2b-2b^2)}{12a+8a^2+9b^2}$.

49. $\dfrac{-\frac{2}{a}+\frac{5a}{3b}+\frac{b}{a}}{\frac{1}{b}+\frac{a}{b}-\frac{5b}{4a}}$ Sol: $-\dfrac{4(5a^2-6b+3b^2)}{3(-4a-4a^2+5b^2)}$.

50. $\dfrac{\frac{1}{a}-\frac{3a}{4b}-\frac{b}{a}}{-\frac{2}{b}-\frac{5a}{2b}-\frac{3b}{4a}}$ Sol: $\dfrac{3a^2-4b+4b^2}{8a+10a^2+3b^2}$.

51. $\dfrac{\frac{2}{a}+\frac{4a}{5b}+\frac{b}{a}}{\frac{2}{b}+\frac{a}{b}+\frac{b}{3a}}$ Sol: $\dfrac{3(4a^2+10b+5b^2)}{5(6a+3a^2+b^2)}$.

52. $\dfrac{-\frac{2}{a}-\frac{a}{b}-\frac{b}{a}}{\frac{2}{b}-\frac{5a}{b}+\frac{b}{a}}$ Sol: $-\dfrac{a^2+2b+b^2}{-2a+5a^2-b^2}$.

53. $\dfrac{-\frac{1}{a}-\frac{4a}{3b}+\frac{3b}{2a}}{\frac{2}{b}+\frac{3a}{b}-\frac{b}{4a}}$ Sol: $\dfrac{2(8a^2+6b-9b^2)}{3(-8a-12a^2+b^2)}$.

54. $\dfrac{-\frac{1}{a}-\frac{5a}{4b}-\frac{5b}{a}}{-\frac{2}{b}-\frac{a}{b}+\frac{b}{a}}$ Sol: $\dfrac{5a^2+4b+20b^2}{4(2a+a^2-b^2)}$.

55. $\dfrac{-\frac{1}{a}-\frac{3a}{b}+\frac{b}{3a}}{\frac{1}{b}+\frac{4a}{b}+\frac{3b}{a}}$ Sol: $\dfrac{-9a^2-3b+b^2}{3(a+4a^2+3b^2)}$.

56. $\dfrac{\frac{1}{a}-\frac{5a}{4b}+\frac{5b}{4a}}{\frac{2}{b}+\frac{a}{b}+\frac{b}{4a}}$ Sol: $\dfrac{-5a^2+4b+5b^2}{8a+4a^2+b^2}$.

57. $-\dfrac{\frac{2}{a}+\frac{a}{b}-\frac{b}{4a}}{-\frac{2}{b}+\frac{a}{2b}-\frac{b}{a}}$ Sol: $\dfrac{-4a^2+8b+b^2}{2(4a-a^2+2b^2}$.

58. $\dfrac{\frac{2}{a}-\frac{a}{b}+\frac{5b}{2a}}{\frac{1}{b}+\frac{2a}{3b}-\frac{b}{a}}$ Sol: $\dfrac{3(2a^2-4b-5b^2)}{2(-3a-2a^2+3b^2)}$.

59. $\dfrac{\frac{1}{a}+\frac{2a}{b}-\frac{3b}{5a}}{\frac{1}{b}-\frac{a}{5b}-\frac{5b}{2a}}$ Sol: $\dfrac{2(-10a^2-5b+3b^2)}{-10a+2a^2+25b^2}$.

60. $\dfrac{-\frac{1}{a}+\frac{a}{b}+\frac{3b}{2a}}{\frac{2}{b}+\frac{4a}{b}+\frac{b}{a}}$ Sol: $\dfrac{2a^2-2b+3b^2}{2(2a+4a^2+b^2)}$.

61. $\dfrac{-\frac{1}{a}+\frac{a}{b}+\frac{4b}{5a}}{-\frac{1}{b}+\frac{3a}{4b}+\frac{b}{3a}}$ Sol: $\dfrac{12(5a^2-5b+4b^2)}{5(-12a+9a^2+4b^2)}$.

62. $\dfrac{\frac{3}{a}+\frac{a}{2b}-\frac{3b}{2a}}{\frac{3}{b}+\frac{3a}{4b}-\frac{3b}{4a}}$ Sol: $-\dfrac{2(a^2+6b-3b^2)}{3(4a+a^2-b^2)}$.

63. $\dfrac{\frac{3}{a}-\frac{2a}{3b}+\frac{b}{2a}}{\frac{2}{b}+\frac{a}{5b}-\frac{3b}{2a}}$ Sol: $\dfrac{5(4a^2-18b-3b^2)}{3(-20a-2a^2+15b^2)}$.

64. $\dfrac{\frac{1}{a}+\frac{2a}{3b}-\frac{2b}{5a}}{\frac{3}{b}+\frac{5a}{b}+\frac{4b}{a}}$ Sol: $\dfrac{10a^2+15b-6b^2}{15(3a+5a^2+4b^2)}$.

65. $\dfrac{\frac{3}{a}+\frac{a}{b}+\frac{b}{5a}}{\frac{1}{b}-\frac{5a}{b}-\frac{b}{a}}$ Sol: $\dfrac{-5a^2-15b-b^2}{5(-a+5a^2+b^2)}$.

66. $\dfrac{-\frac{2}{a}+\frac{a}{b}-\frac{3b}{5a}}{\frac{3}{b}+\frac{4a}{b}+\frac{2b}{a}}$ Sol: $\dfrac{-9a^2-15b+25b^2}{3(10a+25a^2+b^2)}$.

67. $\dfrac{-\frac{2}{a}-\frac{5a}{2b}-\frac{4b}{a}}{\frac{1}{b}-\frac{5a}{2b}+\frac{2b}{a}}$ Sol: $\dfrac{5a^2+4b+8b^2}{-2a+5a^2-4b^2}$.

68. $\dfrac{\frac{3}{a}+\frac{a}{4b}+\frac{4b}{3a}}{\frac{3}{b}+\frac{a}{4b}-\frac{3b}{2a}}$ Sol: $\dfrac{-3a^2-36b-16b^2}{3(-12a-a^2+6b^2)}$.

69. $\dfrac{-\frac{2}{a}-\frac{3a}{2b}-\frac{3b}{2a}}{\frac{2}{b}-\frac{a}{3b}+\frac{b}{a}}$ Sol: $\dfrac{3(3a^2+4b+3b^2)}{2(-6a+a^2-3b^2)}$.

70. $\dfrac{-\frac{1}{a}-\frac{3a}{b}+\frac{5b}{2a}}{\frac{3}{b}-\frac{2a}{b}+\frac{b}{2a}}$ Sol: $\dfrac{6a^2+2b-5b^2}{-6a+4a^2-b^2}$.

71. $\dfrac{-\frac{1}{a}-\frac{a}{5b}+\frac{3b}{a}}{\frac{1}{b}+\frac{2a}{5b}+\frac{b}{a}}$ Sol: $\dfrac{-a^2-5b+15b^2}{5a+2a^2+5b^2}$.

72. $\dfrac{-\frac{2}{a}-\frac{a}{5b}-\frac{b}{a}}{\frac{3}{b}-\frac{a}{b}-\frac{b}{3a}}$ Sol: $\dfrac{3(a^2+10b+5b^2)}{5(-9a+3a^2+b^2)}$.

73. $\dfrac{\frac{3}{a}+\frac{2a}{b}-\frac{b}{a}}{\frac{2}{b}-\frac{5a}{2b}-\frac{b}{4a}}$ Sol: $-\dfrac{4(2a^2+3b-b^2)}{-8a+10a^2+b^2}$.

74. $\dfrac{\frac{1}{a}-\frac{a}{b}-\frac{2b}{3a}}{-\frac{1}{b}+\frac{2a}{3b}-\frac{3b}{5a}}$ Sol: $-\dfrac{5(3a^2-3b+2b^2)}{-15a+10a^2-9b^2}$.

75. $\dfrac{-\frac{1}{a}-\frac{a}{b}+\frac{b}{2a}}{\frac{1}{b}-\frac{a}{b}+\frac{5b}{3a}}$ Sol: $\dfrac{3(2a^2+2b-b^2)}{2(-3a+3a^2-5b^2)}$.

76. $\dfrac{\frac{3}{a}-\frac{a}{b}+\frac{2b}{a}}{\frac{1}{b}+\frac{4a}{b}-\frac{b}{a}}$ Sol: $\dfrac{-a^2+3b+2b^2}{a+4a^2-b^2}$.

77. $\dfrac{\frac{3}{a}+\frac{a}{b}-\frac{b}{2a}}{-\frac{2}{b}+\frac{2a}{b}+\frac{2b}{5a}}$ Sol: $\dfrac{5(2a^2+6b-b^2)}{4(-5a+5a^2+b^2)}$.

78. $\dfrac{\frac{3}{a}+\frac{3a}{2b}+\frac{3b}{4a}}{\frac{1}{b}+\frac{a}{b}+\frac{5b}{a}}$ Sol: $\dfrac{3(2a^2+4b+b^2)}{4(a+2a^2+5b^2)}$.

79. $\dfrac{\frac{1}{a}-\frac{5a}{b}-\frac{2b}{a}}{\frac{3}{b}+\frac{3a}{2b}+\frac{3b}{a}}$ Sol: $\dfrac{2(-10a^2-5b+3b^2)}{-10a+2a^2+25b^2}$.

80. $\dfrac{-\frac{2}{a}+\frac{4a}{5b}-\frac{2b}{a}}{\frac{3}{b}+\frac{a}{b}+\frac{3b}{a}}$ Sol: $\dfrac{2(2a^2-5b-5b^2)}{5(3a+a^2+3b^2)}$.

81. $\dfrac{-\frac{4}{a}-\frac{4a}{b}+\frac{3b}{5a}}{-\frac{5}{b}+\frac{2a}{b}+\frac{b}{a}}$ Sol: $\dfrac{-20a^2-20b+3b^2}{5(-5a+2a^2+b^2)}$.

82. $\dfrac{-\frac{2}{a}-\frac{a}{2b}+\frac{b}{5a}}{-\frac{3}{b}+\frac{a}{b}-\frac{b}{a}}$ Sol: $-\dfrac{-5a^2-20b+2b^2}{10(3a-a^2+b^2)}$.

83. $\dfrac{-\frac{1}{a}+\frac{a}{b}-\frac{4b}{5a}}{\frac{4}{b}-\frac{a}{4b}+\frac{5b}{2a}}$ Sol: $-\dfrac{4(5a^2-5b-4b^2)}{5(-16a+a^2-10b^2)}$.

84. $\dfrac{\frac{2}{a}+\frac{a}{2b}+\frac{3b}{2a}}{-\frac{5}{b}-\frac{4a}{3b}-\frac{b}{a}}$ Sol: $-\dfrac{3(a^2+4b+3b^2)}{2(15a+4a^2+3b^2)}$.

85. $\dfrac{-\frac{5}{a}-\frac{a}{b}-\frac{2b}{5a}}{\frac{2}{b}+\frac{3a}{2b}-\frac{5b}{4a}}$ Sol: $\dfrac{4(5a^2+25b+2b^2)}{5(-8a-6a^2+5b^2)}$.

86. $\dfrac{-\frac{1}{a}+\frac{a}{2b}+\frac{2b}{5a}}{-\frac{5}{b}-\frac{a}{5b}+\frac{5b}{2a}}$ Sol: $\dfrac{-5a^2+10b-4b^2}{50a+2a^2-25b^2}$.

87. $\dfrac{-\frac{3}{a}+\frac{3a}{b}-\frac{b}{2a}}{\frac{4}{b}+\frac{2a}{5b}-\frac{2b}{a}}$ Sol: $\dfrac{5(-6a^2+6b+b^2)}{4(-10a-a^2+5b^2)}$.

88. $\dfrac{-\frac{4}{a}-\frac{2a}{3b}-\frac{b}{2a}}{\frac{5}{b}+\frac{a}{2b}+\frac{2b}{5a}}$ Sol: $-\dfrac{5(4a^2+24b+3b^2)}{3(50a+5a^2+4b^2)}$.

89. $\dfrac{-\frac{4}{a}+\frac{a}{b}+\frac{b}{a}}{-\frac{4}{b}+\frac{4a}{b}+\frac{3b}{5a}}$ Sol: $\dfrac{5(a^2-4b+b^2)}{-20a+20a^2+3b^2}$.

90. $\dfrac{\frac{4}{a}+\frac{3a}{2b}-\frac{2b}{a}}{-\frac{2}{b}-\frac{a}{b}-\frac{b}{3a}}$ Sol: $-\dfrac{3(3a^2+8b-4b^2)}{2(6a+3a^2+b^2)}$.

91. $\dfrac{-\frac{1}{a}-\frac{a}{52b}-\frac{4b}{5a}}{-\frac{4}{b}+\frac{3a}{2b}+\frac{3b}{4a}}$ Sol: $-\dfrac{2(5a^2+10b+8b^2)}{5(-16a+6a^2+3b^2)}$.

92. $\dfrac{-\frac{5}{a}+\frac{2a}{5b}-\frac{2b}{3a}}{\frac{3}{b}-\frac{2a}{5b}-\frac{5b}{2a}}$ Sol: $\dfrac{2(-6a^2+75b+10b^2)}{3(-30a+4a^2+25b^2)}$.

93. $\dfrac{-\frac{5}{a}+\frac{3a}{b}-\frac{b}{a}}{-\frac{4}{b}-\frac{5a}{b}+\frac{b}{a}}$ Sol: $-\dfrac{-3a^2+5b+b^2}{4a+5a^2-b^2}$.

94. $\dfrac{\frac{4}{a}+\frac{2a}{b}-\frac{b}{3a}}{\frac{3}{b}+\frac{a}{b}-\frac{b}{2a}}$ Sol: $-\dfrac{2(-6a^2-12b+b^2)}{3(-6a-2a^2+b^2)}$.

95. $\dfrac{\frac{5}{a}-\frac{3a}{2b}+\frac{4b}{a}}{\frac{2}{b}-\frac{a}{b}-\frac{b}{a}}$ Sol: $\dfrac{3a^2-10b-8b^2}{2(-2a+a^2+b^2)}$.

96. $\dfrac{\frac{5}{a}+\frac{4a}{5b}-\frac{2b}{a}}{\frac{3}{b}+\frac{a}{3b}-\frac{3b}{5a}}$ Sol: $\dfrac{3(4a^2+25b-10b^2)}{45a+5a^2-9b^2}$.

97. $\dfrac{-\frac{5}{a}+\frac{a}{2b}-\frac{2b}{a}}{-\frac{5}{b}-\frac{5a}{3b}+\frac{b}{2a}}$ Sol: $-\dfrac{3(a^2-10b-4b^2)}{30a+10a^2-3b^2}$.

98. $\dfrac{-\frac{4}{a}-\frac{a}{3b}-\frac{b}{a}}{-\frac{5}{b}-\frac{a}{b}+\frac{b}{5a}}$ Sol: $\dfrac{5(a^2+12b+3b^2)}{3(25a+5a^2-b^2)}$.

99. $\dfrac{\frac{5}{a}-\frac{a}{3b}+\frac{b}{4a}}{-\frac{5}{b}-\frac{5a}{4b}+\frac{5b}{4a}}$ Sol: $\dfrac{4a^2-60b-3b^2}{15(4a+a^2-b^2)}$.

100. $\dfrac{\frac{1}{a}-\frac{3a}{5b}+\frac{5b}{2a}}{-\frac{5}{b}+\frac{5a}{4b}+\frac{2b}{3a}}$ Sol: $\dfrac{6(6a^2-10b-25b^2)}{5(-60a+15a^2+8b^2)}$.