FRACCIONES ALGEBRAICAS

Simplificar:

1. $\dfrac{3 - 12a^2}{9 + 36a + 36a^2}$

2. $\dfrac{(xy)^5 - (xy)^8}{(xy)^6 - (xy)^9}$

3. $\dfrac{2ab^2 - 6bc}{4a^2b - 12ac}$

4. $\dfrac{10x^2 - 10x^4}{5x^3 + 10x^4 + 5x^5}$

5. $\dfrac{x^3y^2 - 5x^3y^3}{x^5y^3 - 5x^5y^4}$

6. $\dfrac{15x + 15}{10x + 10}$

7. $\dfrac{3x^2 + 6x}{5x^2 - 5x}$

8. $\dfrac{2x^3 - 6x^2}{ax - 3a}$

9. $\dfrac{15x^4y - 15x^3y + 30xy}{3x^3y - 9x^2y + 3xy}$

10. $\dfrac{a^2b^4 - ab^4}{a^4b^4 - a^4b^3}$

11. $\dfrac{3a^2b - 5ab}{6a^3b^2 - 10a^2b^2}$

12. $\dfrac{x^2 + x}{x^2 + 2x + 1}$

13. $\dfrac{x^2 - 1}{x^2 - 2x + 1}$

14. $\dfrac{x^2 - 1}{x^2 + 2x + 1}$

15. $\dfrac{3x - 9}{x^2 - 9}$

16. $\dfrac{5x^2 + 10x}{3x^4 + 12x^3 + 12x^2}$

17. $\dfrac{x^2 - 1}{x^4 - 1}$

18. $\dfrac{2x^3 - 6x^2}{x^2 - 6x + 9}$

19. $\dfrac{5ab}{15a + 10a^2}$

20. $\dfrac{4x^2 - 8x}{4x}$

21. $\dfrac{2z^3 - 12z^2 + 18z}{4z^3 - 36z}$

22. $\dfrac{ab - bx}{a^2 - x^2}$

23. $\dfrac{(ab)^3}{(ab)^3 - (ab)^4}$

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

25. $\dfrac{18a - 3ab}{6a^2}$

26. $\dfrac{8x^2 - 2}{16x^2 - 16x + 4}$

27. $\dfrac{(xy)^3 - (xy)^6}{(xy)^8}$

28. $\dfrac{15ab - 3ac}{10b^2 - 2bc}$

Operar y simplificar:

29. $\dfrac{1}{ab}+\dfrac{1}{b}-\dfrac{1}{a}$

30. $\dfrac{1}{xy}+\dfrac{1}{x^2y}+\dfrac{1}{y^2}$

31. $\dfrac{1}{x}-\dfrac{1}{x-1}$

32. $\dfrac{1}{x+2}-\dfrac{1}{x-2}$

33. $\dfrac{3}{x-3}-\dfrac{1}{x+2}$

34. $\dfrac{2}{x+3}-\dfrac{3}{x-3}+\dfrac{3x+10}{x^2-9}$

35. $\dfrac{a}{b}\cdot\dfrac{a^2}{b^3}$

36. $\dfrac{x+1}{x^2-2x+1}\cdot\dfrac{x^2-1}{x^3}$

37. $\dfrac{a^2b^3}{c^2}\cdot\dfrac{c^3a}{b^4}$

38. $\dfrac{x+1}{x-1}\cdot\dfrac{x^2+1}{x^2-1}$

39. $\dfrac{x-2}{x+2}:\dfrac{x^2-4}{x^2+4x+4}$

40. $\dfrac{x}{y}:\dfrac{x+1}{y+1}$

41. $\left(\dfrac{a}{b}:\dfrac{a}{c}\right):\dfrac{a}{d}$

42. $\dfrac{a}{b}:\left(\dfrac{a}{c}:\dfrac{a}{d}\right)$

43. $\dfrac{1}{x+2}-\dfrac{1}{x^2+4x+4}$

44. $\dfrac{1}{x+3}-\dfrac{1}{x-3}$

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

46. $\dfrac{1}{x^2+2x+1}-\dfrac{1}{x^2-1}-\dfrac{1}{x^2-2x+1}$

47. $\dfrac{1}{x-1}+\dfrac{1}{x+1}-\dfrac{2}{x^2-1}$

48. $\dfrac{4}{(x-1)(x+3)}-\dfrac{3}{(x-1)(x+2)}$

49. $\dfrac{x^3-x^2}{(x+3)(x+2)}:\dfrac{x^2+x}{x^2-4}$

50. $\dfrac{x^2-4}{x^2-9}:\dfrac{x^2-4x+4}{x^2+6x+9}$

51. $\dfrac{x}{x-1}+\dfrac{1}{x}-\dfrac{x^2}{x^2-x}$

52. $\left(2x-\dfrac{2}{x}\right)\cdot\left(1+\dfrac{1}{x-1}\right)$

53. $\left(\dfrac{1}{x+2}+\dfrac{x}{x-2}\right):\left(\dfrac{x}{x+2}-\dfrac{1}{x-2}\right)$

54. $\dfrac{a}{b}\cdot\left(\dfrac{1}{a}-\dfrac{1}{b}\right)$

55. $\dfrac{2}{x}\cdot\left(\dfrac{1}{x}:\dfrac{1}{x-1}\right)$

56. $\left(\dfrac{1}{x-1}-\dfrac{1}{x+2}\right):\dfrac{2}{x^2-2x+1}$

57. $\left(\dfrac{10}{x+3}-\dfrac{8}{x+2}\right):\left(\dfrac{x+2}{x}-\dfrac{8}{x+2}\right)$

58. $\dfrac{1}{a^2-b^2}:\dfrac{1}{a+b}$

59. $\dfrac{3x^2-3x}{y}:\dfrac{yx-y}{y^2}$

60. $\left(1+\dfrac{x-y}{x+y}\right):\left(1-\dfrac{x-y}{x+y}\right)$

61. $\dfrac{x}{x-2}+\dfrac{2x^2-3x+18}{x^3-4x}-\dfrac{4x}{x^2+2x}$

62. $\dfrac{x+\dfrac{1}{x}}{x-\dfrac{1}{x}}$

63. $\dfrac{x^2+2xy+y^2}{x+y}:\dfrac{x^2-y^2}{\dfrac{1}{x}-\dfrac{1}{y}}$

64. $\left(\dfrac{1}{3x-y}-\dfrac{1}{3x}\right):\dfrac{1}{\dfrac{3x}{y}-1}$

SOLUCIONES

1. $\dfrac{1-2a}{3+6a}$	**17.** $\dfrac{1}{x^2+1}$	**33.** $\dfrac{2x+9}{x^2-x-6}$	**49.** $\dfrac{x^3-3x^2+2x}{x^2+4x+3}$
2. $\dfrac{1}{xy}$	**18.** $\dfrac{2x^2}{x-3}$	**34.** $\dfrac{2x-5}{x^2-9}$	**50.** $\dfrac{x^2+5x+6}{x^2-5x+6}$
3. $\dfrac{b}{2a}$	**19.** $\dfrac{b}{3+2a}$	**35.** $\dfrac{a^3}{b^4}$	**51.** $\dfrac{1}{x}$
4. $\dfrac{2-2x}{x+x^2}$	**20.** $x-2$	**36.** $\dfrac{x^2+2x+1}{x^4-x^3}$	**52.** $2x+2$
5. $\dfrac{1}{x^2y}$	**21.** $\dfrac{z-3}{2z+6}$	**37.** $\dfrac{a^3c}{b}$	**53.** $\dfrac{x^2+3x-2}{x^2-3x-2}$
6. $\dfrac{3}{2}$	**22.** $\dfrac{b}{a+x}$	**38.** $\dfrac{x^2+1}{x^2-2x+1}$	**54.** $\dfrac{b-a}{b^2}$
7. $\dfrac{3x+6}{5x-5}$	**23.** $\dfrac{1}{1-ab}$	**39.** 1	**55.** $\dfrac{2x-2}{x^2}$
8. $\dfrac{2x^2}{a}$	**24.** $\dfrac{a-b}{3}$	**40.** $\dfrac{xy+x}{xy+y}$	**56.** $\dfrac{3x-3}{2x+4}$
9. $\dfrac{5x^3-5x^2+10}{x^2-3x+1}$	**25.** $\dfrac{6-b}{2a}$	**41.** $\dfrac{cd}{ab}$	**57.** $\dfrac{2x}{x^2+x-6}$
10. $\dfrac{ba-b}{a^3b-a^3}$	**26.** $\dfrac{2x+1}{4x-2}$	**42.** $\dfrac{ac}{bd}$	**58.** $\dfrac{1}{a-b}$
11. $\dfrac{1}{2ab}$	**27.** $\dfrac{1-x^3y^3}{x^5y^5}$	**43.** $\dfrac{x+1}{x^2+4x+4}$	**59.** $3x$
12. $\dfrac{x}{x+1}$	**28.** $\dfrac{3a}{2b}$	**44.** $\dfrac{-6}{x^2-9}$	**60.** $\dfrac{x}{y}$
13. $\dfrac{x+1}{x-1}$	**29.** $\dfrac{1+a-b}{ab}$	**45.** $\dfrac{-3x+5}{2x^2+2x}$	**61.** $\dfrac{x^3+5x+18}{x^3-4x}$
14. $\dfrac{x-1}{x+1}$	**30.** $\dfrac{xy+y+x^2}{x^2y^2}$	**46.** $\dfrac{-x^2-4x+1}{x^4-2x^2+1}$	**62.** $\dfrac{x^2+1}{x^2-1}$
15. $\dfrac{3}{x+3}$	**31.** $\dfrac{-1}{x^2-x}$	**47.** $\dfrac{2}{x+1}$	**63.** $\dfrac{-1}{xy}$
16. $\dfrac{5}{3x^2+6x}$	**32.** $\dfrac{-4}{x^2-4}$	**48.** $\dfrac{1}{x^2+5x+6}$	**64.** $\dfrac{1}{3x}$