



FRACCIONES ALGEBRAICAS

Simplificar:

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

Operar y simplificar:

29. $\frac{1}{ab} + \frac{1}{b} - \frac{1}{a}$
30. $\frac{1}{xy} + \frac{1}{x^2y} + \frac{1}{y^2}$
31. $\frac{1}{x} - \frac{1}{x-1}$
32. $\frac{1}{x+2} - \frac{1}{x-2}$
33. $\frac{3}{x-3} - \frac{1}{x+2}$
34. $\frac{2}{x+3} - \frac{3}{x-3} + \frac{3x+10}{x^2-9}$
35. $\frac{a}{b} \cdot \frac{a^2}{b^3}$
36. $\frac{x+1}{x^2-2x+1} \cdot \frac{x^2-1}{x^3}$
37. $\frac{a^2b^3}{c^2} \cdot \frac{c^3a}{b^4}$
38. $\frac{x+1}{x-1} \cdot \frac{x^2+1}{x^2-1}$
39. $\frac{x-2}{x+2} \cdot \frac{x^2-4}{x^2+4x+4}$
40. $\frac{x}{y} \cdot \frac{x+1}{y+1}$
41. $\left(\frac{a}{b} : \frac{a}{c}\right) : \frac{a}{d}$
42. $\frac{a}{b} : \left(\frac{a}{c} : \frac{a}{d}\right)$
43. $\frac{1}{x+2} - \frac{1}{x^2+4x+4}$
44. $\frac{1}{x+3} - \frac{1}{x-3}$
45. $\frac{3}{2x} - \frac{3x-1}{x^2+x}$
46. $\frac{1}{x^2+2x+1} - \frac{1}{x^2-1} - \frac{1}{x^2-2x+1}$
47. $\frac{1}{x-1} + \frac{1}{x+1} - \frac{2}{x^2-1}$
48. $\frac{4}{(x-1)(x+3)} - \frac{3}{(x-1)(x+2)}$
49. $\frac{x^3-x^2}{(x+3)(x+2)} : \frac{x^2+x}{x^2-4}$
50. $\frac{x^2-4}{x^2-9} : \frac{x^2-4x+4}{x^2+6x+9}$
51. $\frac{x}{x-1} + \frac{1}{x} - \frac{x^2}{x^2-x}$
52. $\left(2x - \frac{2}{x}\right) \cdot \left(1 + \frac{1}{x-1}\right)$
53. $\left(\frac{1}{x+2} + \frac{x}{x-2}\right) : \left(\frac{x}{x+2} - \frac{1}{x-2}\right)$
54. $\frac{a}{b} \cdot \left(\frac{1}{a} - \frac{1}{b}\right)$
55. $\frac{2}{x} \cdot \left(\frac{1}{x} : \frac{1}{x-1}\right)$
56. $\left(\frac{1}{x-1} - \frac{1}{x+2}\right) : \frac{2}{x^2-2x+1}$
57. $\left(\frac{10}{x+3} - \frac{8}{x+2}\right) : \left(\frac{x+2}{x} - \frac{8}{x+2}\right)$
58. $\frac{1}{a^2-b^2} : \frac{1}{a+b}$
59. $\frac{3x^2-3x}{y} : \frac{yx-y}{y^2}$
60. $\left(1 + \frac{x-y}{x+y}\right) : \left(1 - \frac{x-y}{x+y}\right)$
61. $\frac{x}{x-2} + \frac{2x^2-3x+18}{x^3-4x} - \frac{4x}{x^2+2x}$
62. $\frac{x + \frac{1}{x}}{x - \frac{1}{x}}$
63. $\frac{x^2+2xy+y^2}{x+y} : \frac{x^2-y^2}{\frac{1}{x} - \frac{1}{y}}$
64. $\left(\frac{1}{3x-y} - \frac{1}{3x}\right) : \frac{1}{\frac{3x}{y} - 1}$