

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:

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

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

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

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

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

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

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

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

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

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

$$39. \frac{x-2}{x+2} \cdot \frac{x^2-4}{x^2+4x+4}$$

$$40. \frac{x}{y} \cdot \frac{x+1}{y+1}$$

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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