

EXERCICES - Fractions rationnelles

1. $\frac{2a^2-18}{4a^2+24a+36}$
2. $\frac{ax-ay+bx-by}{x^2-2xy+y^2}$
3. $\frac{42a^3-30a^2x}{35ax^2-25x^3}$
4. $\frac{3x^2-5}{4a} - \frac{6-2x^2}{3a}$
5. $\frac{1-8c}{5a} - \frac{3x-4}{6a^2}$
6. $\frac{x-y}{xy} - \frac{z-y}{yz} + \frac{z-x}{xz}$
7. $\frac{1}{4x-4} + \frac{1}{4x+4} + \frac{x}{2x^2-2}$
8. $\frac{1}{a-1} + \frac{1}{a+1} - \frac{2}{a}$
9. $\frac{x^2+y^2}{x^2-y^2} - \frac{x}{x-y} + \frac{y}{x+y}$
10. $\frac{3y}{x-3y} + \frac{x}{x+3y} + \frac{6xy}{x^2-9y^2}$
11. $\frac{1}{x-1} + \frac{1}{(x-1)(x-2)} - \frac{1}{(2-x)(x-3)}$
12. $\frac{1}{x^2-y^2} + \frac{1}{x^2+xy} - \frac{1}{2x^2-2xy}$
13. $\frac{a+1}{2a-2} - \frac{a-1}{2(a+1)} - \frac{4a}{a^2-1} + \frac{a^2+1}{a^2-1}$
14. $\frac{3}{2x+y} - \frac{6x}{4x^2+4xy+y^2}$
15. $\frac{a^2}{a^3+3a^2b+3ab^2+b^3} - \frac{2a}{(a+b)^2} + \frac{1}{b+a}$
16. $\frac{7x^2}{8x+12y} - \frac{5x^2}{6x+9y}$
17. $\frac{x}{x-1} - \frac{x}{x+1} + \frac{2x^2}{x^2-1}$
18. $\frac{1}{(x-1)^2} - \frac{4}{(x^2-1)^2} + \frac{1}{(x+1)^2}$
19. $\frac{x}{x+y} + \frac{x}{x-y} - \frac{2xy}{y^2-x^2}$
20. $a + \frac{1}{1+a} - \frac{1+a^2}{1-a^2}$
21. $\frac{2a}{4a+8b} \cdot \frac{a^2-4b^2}{a^3}$
22. $\frac{1+4a}{1-4a} \cdot \frac{1-8a+16a^2}{1-16a^2}$
23. $\frac{a^4-b^4}{a^2+b^2} \cdot \frac{(a-b)^2}{(a-b)^3}$
24. $\frac{4x^2-12xy+9y^2}{3x+2y} \cdot \frac{9x^2-4y^2}{4x^2-9y^2}$
25. $\frac{16a^2-25b^2}{a^2-16} \cdot \frac{a^3-4a^2}{4a-5b}$
26. $\frac{4x}{x-y} \cdot \frac{1}{2x^2}$
27. $\frac{a+b}{\frac{a+b}{2}}$
28. $\frac{(x-y)^2}{\frac{3a}{x^2-y^2}} \cdot \frac{1}{6a}$
29. $\frac{\frac{a-b}{a+b}}{\frac{2a+2b}{a^2+ab}}$
30. $\frac{\frac{x^2+2xy+y^2}{8x}}{\frac{x^2-y^2}{4a}}$
31. $\frac{\frac{12a-8b}{a-b}}{\frac{9a^2-4b^2}{b-a}}$
32. $\frac{\frac{(x-y)^3}{x^2-y^2}}{\frac{x-y}{(x-y)^2}}$
33. $\frac{\frac{a^2-4x^2}{a^2+4ax}}{\frac{a^2-2ax}{ax+4x^2}}$
34. $\left(\frac{1}{x+1} + \frac{2x}{1-x^2}\right) \cdot \left(\frac{1}{x} - 1\right)$
35. $\frac{\frac{2x}{x+y} + \frac{y}{y+x} + \frac{y^2}{x^2-y^2}}{\frac{1}{x+y} - \frac{x}{y^2-x^2}}$
36. $\frac{\left(1 - \frac{x}{x-1}\right) (x^2 - 1)}{x + \frac{1}{x+2}}$
37. $3 + \frac{1 + \frac{2}{a}}{\frac{a+2}{a-2}}$
38. $\frac{\left(\frac{1}{y} + \frac{1}{x-y}\right) \left(\frac{x^2+xy}{x-y} - \frac{x^3+y^3}{x^2-xy}\right)}{\frac{x+3y}{x^2-y^2} + \frac{x+2y}{y(x+y)}}$

Solutions - Fractions rationnelles

1. $\frac{a-3}{2(a+3)}$
2. $\frac{a+b}{x-y}$
3. $\frac{6a^2}{5x^2}$
4. $\frac{17x^2-39}{12a}$
5. $\frac{6a-48ac-15x+20}{30a^2}$
6. 0
7. $\frac{x}{(x-1)(x+1)}$
8. $\frac{2}{a(a-1)(a+1)}$
9. 0
10. $\frac{x+3y}{x-3y}$
11. $\frac{1}{x-3}$
12. $\frac{3}{2x(x+y)}$
13. $\frac{a-1}{a+1}$
14. $\frac{3y}{(2x+y)^2}$
15. $\frac{b^2}{(a+b)^3}$
16. $\frac{x^2}{12(2x+3y)}$
17. $\frac{2x}{x-1}$
18. $\frac{2}{(x+1)(x-1)}$
19. $\frac{2x}{x-y}$
20. $\frac{a^2}{a-1}$
21. $\frac{a-2b}{2a^2}$
22. 1
23. $a + b$
24. $\frac{(2x-3y)(3x-2y)}{2x+3y}$
25. $\frac{(4a+5b)a^2}{a+4}$
26. $\frac{2}{x(x-y)}$
27. 2
28. $\frac{2(x-y)}{x+y}$
29. $\frac{a(a-b)}{2(a+b)}$
30. $\frac{a(x+y)}{2x(x-y)}$
31. $\frac{-4}{3a+2b}$
32. $\frac{(x-y)^3}{x+y}$
33. $\frac{x(2x+a)}{a^2}$
34. $\frac{1}{1-x} \cdot \frac{1-x}{x} = \frac{1}{x}$
35. $\frac{\frac{x(2x-y)}{(x-y)(x+y)}}{2x-y} = x$
36. $\frac{-x-1}{(x+1)^2} = -\frac{x+2}{x+1}$
37. $3 + \frac{a-2}{a} = \frac{4a-2}{a}$
38. $\frac{\frac{x+y}{x-y}}{y(x-y)} = y$