Fractions algébriques - Simplifier si possible

Exercices avec mise en évidence préalable

Simplifier les fractions algébriques suivantes : (On admettra qu'aucun facteur n'est nul)

$$\frac{4x+8}{4-8x}$$
$$\frac{5}{10x-15y}$$
$$\frac{a^2}{a^2-ab}$$
$$\frac{3a+9}{6}$$
$$\frac{8a+12b}{4a}$$
$$\frac{x^2}{x^2+xy}$$
$$\frac{x^2-xy}{x^2}$$
$$\frac{2x}{4x^2y-2x}$$
$$\frac{6ab-12b^2}{4b^3}$$
$$\frac{a^2-ab}{a^2+ab}$$
$$\frac{8x^2+8xy}{11y^2+11xy}$$
$$\frac{21a^2-14ax}{15ab-10bx}$$
$$\frac{75a+75b+75c}{-35a-35b-35c}$$
$$\frac{12m^2-12mx}{18mx-18x^2}$$

☞ **ici** les réponses

Réponses :

$$\frac{4x+8}{4-8x} = \frac{4(x+2)}{4(1-2x)} = \frac{x+2}{1-2x}$$
$$\frac{5}{10x-15y} = \frac{5}{5(2x-3y)} = \frac{1}{2x-3y}$$
$$\frac{a^2}{a^2-ab} = \frac{a^2}{a(a-b)} = \frac{a}{a-b}$$
$$\frac{3a+9}{6} = \frac{3(a+3)}{6} = \frac{a+3}{2}$$
$$\frac{8a+12b}{4a} = \frac{4(2a+3b)}{4a} = \frac{2a+3b}{a}$$
$$\frac{x^2}{x^2+xy} = \frac{x^2}{x(x+y)} = \frac{x}{x+y}$$
$$\frac{x^2-xy}{x^2} = \frac{x(x-y)}{x^2} = \frac{x-y}{x}$$
$$\frac{2x}{4x^2y-2x} = \frac{2x}{2x(2xy-1)} = \frac{1}{2xy-1}$$
$$\frac{6ab-12b^2}{4b^3} = \frac{6b(a-2b)}{4b^3} = \frac{3(a-2b)}{2b^2}$$
$$\frac{a^2-ab}{a^2+ab} = \frac{a(a-b)}{a(a+b)} = \frac{a-b}{a+b}$$
$$\frac{8x^2+8xy}{11y^2+11xy} = \frac{8x(x+y)}{11y(y+x)} = \frac{8x}{11y}$$
$$\frac{21a^2-14ax}{15ab-10bx} = \frac{7a(3a-2x)}{5b(3a-2x)} = \frac{7a}{5b}$$
$$\frac{75a+75b+75c}{-35a-35b-35c} = \frac{75(a+b+c)}{-(a+b+c)} = -75$$
$$\frac{12m^2-12mx}{18x^2-18mx} = \frac{12m(m-x)}{18x(x-m)} = -\frac{12m(m-x)}{18x(m-x)} = -\frac{2m}{3x}$$

☞ **Retour**