

## 6.2 Multiplier et diviser des expressions rationnelles

\* Semblable aux fractions, utilise...

$$\frac{A}{B} \times \frac{C}{D} = \frac{A \times C}{B \times D}$$

$$B \neq 0 \quad D \neq 0$$

ex.  $\frac{x^2 - x - 12}{x^2 - 9} \times \frac{x^2 - 4x + 3}{x^2 - 4x}$

$$= \frac{(x-4)(x+3)}{(x-3)(x+3)} \cdot \frac{(x-3)(x-1)}{x(x-4)}$$

$$= \frac{x-1}{x}$$

$$\frac{A}{B} \div \frac{C}{D} = \frac{A}{B} \times \frac{D}{C}$$

$$B \neq 0 \quad D \neq 0$$

une autre restriction

$$C \neq 0$$

\* restrictions

$$x \neq \pm 3, 0, 4$$

\* domaine

$$\{x \in \mathbb{R} \mid x \neq \pm 3, 0, 4\}$$

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ex.  $\frac{x^2 - 4}{x^2 - 4x} \div \frac{x^2 + x - 6}{x^2 + x - 20}$

$$= \frac{(x+2)(x-2)}{x(x-4)} \div \frac{(x+3)(x-2)}{(x+5)(x-4)}$$

$$= \frac{(x+2)(x-2)}{x(x-4)} \times \frac{(x+5)(x-4)}{(x+3)(x-2)}$$

$$= \frac{(x+2)(x+5)}{x(x+3)}$$

\* restrictions

$$x \neq 0, 4, -5, -3, 2$$

\* domaine

$$\{x \in \mathbb{R} \mid x \neq -5, -3, 0, 2, 4\}$$

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$$\frac{c^2 - 6c - 7}{c^2 - 49} \div \frac{c^2 + 8c + 7}{c^2 + 7c}$$

$$\frac{(c-7)(c+1)}{(c-7)(c+7)} \div \frac{(c+7)(c+1)}{c(c+7)}$$

$$\frac{\cancel{(c-7)}\cancel{(c+1)}}{\cancel{(c-7)}\cancel{(c+7)}} \times \frac{c\cancel{(c+7)}}{\cancel{(c+7)}\cancel{(c+1)}}$$

$$= \frac{c}{c+7}$$

restrictions

$$c \neq \pm 7, 0, -1$$

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$$\left[ \frac{3x+12}{3x^2-5x-12} \div \frac{12}{3x+4} \right] \times \frac{2x-6}{x+4}$$

$$\left[ \frac{3(x+4)}{(3x+4)(x-3)} \div \frac{12}{3x+4} \right] \times \frac{2(x-3)}{x+4}$$

$$\frac{\cancel{3}\cancel{(x+4)}}{\cancel{(3x+4)}\cancel{(x-3)}} \times \frac{\cancel{3x+4}}{12 \cancel{6} 2} \times \frac{\cancel{2}\cancel{(x-3)}}{\cancel{x+4}}$$

$$= \frac{1}{2}$$

restrictions

$$3x+4 \neq 0$$

$$3x \neq -4$$

$$x \neq -\frac{4}{3}$$

$$x \neq -\frac{4}{3}, 3, -4$$