

## 1.2) Algebraic fractions

## Worked example

Simplify:

$$\frac{x^2 - x}{y^2} \div \frac{x^2 + x - 2}{y^5}$$

## Your turn

Simplify:

$$\frac{x^2 + x}{y} \div \frac{x^2 - x - 2}{y^2}$$
$$\frac{xy}{x - 2}$$

## Worked example

Simplify:

$$\frac{x^2 + 6x + 5}{x^2 + 3x - 10}$$

$$\frac{x^2 - 7x - 8}{x^2 - 1}$$

## Your turn

Simplify:

$$\frac{x^2 - 6x + 5}{x^2 + 4x - 5}$$
$$\frac{x - 5}{x + 5}$$

## Worked example

Simplify:

$$\frac{2x^2 - 5x - 3}{3x^2 - 11x + 6}$$

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

## Your turn

Simplify:

$$\frac{3x^2 - 5x - 2}{2x^2 - 7x + 6}$$
$$\frac{3x + 1}{2x - 3}$$

## Worked example

Simplify:

$$\frac{3x^2 + 2x - 8}{6x^2 - 23x - 35} \times \frac{7x^2 - 29x - 30}{4x^2 + 5x - 6}$$

$$\frac{6x^2 + 37x - 35}{3x^2 - 10x - 8} \times \frac{3x^2 + 14x + 8}{42x^2 + 35x}$$

## Your turn

Simplify:

$$\frac{2x^2 + 3x - 35}{3x^2 - 11x - 4} \times \frac{6x^2 - 23x - 4}{2x^2 - 3x - 27}$$

$$\frac{(x + 5)(2x - 7)(6x + 1)}{(3x + 1)(2x - 9)(x + 3)}$$

## Worked example

Simplify:

$$\frac{3x^2 - 10x - 8}{6x^2 + 37x - 35} \div \frac{x^2 - 3x - 4}{x^2 - 49}$$

## Your turn

Simplify:

$$\frac{2x^2 - 7x - 15}{3x^2 + 10x - 8} \div \frac{2x^2 + x - 3}{x^2 - 16}$$

$$\frac{(x - 5)(x - 4)}{(3x - 2)(x - 1)}$$

## Worked example

Simplify:

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

## Your turn

Simplify:

$$\frac{3x^3 - x^2 - 10x}{4x - 8}$$
$$\frac{x(3x + 5)}{4}$$

## Worked example

Simplify:

$$\frac{2x^3 + 5x^2 - 3x}{4x^2 - 1}$$

## Your turn

Simplify:

$$\frac{3x^3 - x^2 - 10x}{9x^2 - 25}$$
$$\frac{x(x - 2)}{3x - 5}$$