

1 Solve the equation

$$\frac{2x}{3} - \frac{x}{2} = \frac{5}{12}.$$

(Show at least one intermediate step.)

To begin with, I multiply both sides by 12 (a common denominator); after that, it's pretty straightforward.

$$\frac{2x}{3} - \frac{x}{2} = \frac{5}{12};$$

$$8x - 6x = 5;$$

$$2x = 5;$$

$$x = \frac{5}{2}.$$

2 Solve the equation

$$x(x - 1) = 6.$$

(Show at least two intermediate steps.)

It's useless that the left-hand side is factored, since the right-hand side is not zero; I must expand everything out and start afresh.

$$x(x - 1) = 6;$$

$$x^2 - x = 6;$$

$$x^2 - x - 6 = 0;$$

$$(x - 3)(x + 2) = 0;$$

$$x - 3 = 0 \text{ or } x + 2 = 0;$$

$$x = 3 \text{ or } x = -2.$$