

# Unit 1 Solving equations

There are 4 basic operations when solving equations:

Original Problem

$$x + 4 = 10$$

How to solve:

$$x + 4 = 10$$

$$\begin{array}{r} -4 \quad -4 \end{array}$$

$$x = 6$$

$$x - 4 = 10$$

$$x - 4 = 10$$

$$\begin{array}{r} +4 \quad +4 \end{array}$$

$$x = 14$$

$$4x = 10$$

$$\underline{4x = 10}$$

$$\begin{array}{r} 4 \quad 4 \end{array}$$

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

$$\frac{x}{4} = 10$$

$$(4) \frac{x}{4} = 10 (4)$$

$$x = 40$$

Other “not so basic” operations when solving equations:

Original Problem

$$\frac{4}{5}x = 10$$

How to solve:

$$\left(\frac{5}{4}\right)\frac{4}{5}x = 10\left(\frac{5}{4}\right)$$

$$x = \frac{25}{2}$$

$$-x - 4 = 10$$

$$-x - 4 = 10$$

$$\begin{array}{r} +4 \quad +4 \end{array}$$

$$-x = 14$$

$$\underline{\underline{-x = 14}}$$
$$\begin{array}{r} -1 \quad -1 \end{array}$$

$$x = -14$$

$$6 - 2(-x + 4) = 10$$

$$6 - 2(-x + 4) = 10$$

$$6 + 2x - 8 = 10$$

$$2x - 2 = 10$$

$$\begin{array}{r} +2 \quad +2 \end{array}$$

$$2x = 12$$

$$\underline{\underline{2x = 12}}$$
$$\begin{array}{r} 2 \quad 2 \end{array}$$

$$x = 6$$