

Formulae and Transpositions

Formulae are everywhere (sorry folks... don't really know what to start this section off with). We need to be able to hack out what we want from a given formula or equation:

Examples

Example 1 Given that $V = IR$, express I in terms of V , R

Solution:

Not too taxing, we want an equation for I , it's written as equation for V , so divide both sides by R .

$$\frac{V}{R} = \frac{IR}{R} = I$$

In other words, reading it back to front

$$I = \frac{V}{R}$$

Example 2 Given that $T = 2\pi(\sqrt{\frac{L}{g}})$, express L in terms of T , g .

Solutions:

Get rid of the square root by squaring both sides of the equation.

$$T^2 = (2\pi\sqrt{\frac{L}{g}})^2 = 4\pi^2 \frac{L}{g}$$

multiply both sides by $g/4\pi^2$

$$\frac{g}{4\pi^2} \times T^2 = \frac{g}{4\pi^2} \times 4\pi^2 \frac{L}{g}$$

and cancel out whatever you can to get

$$\frac{gT^2}{4\pi^2} = L$$

The trick to transposing or rearranging formulas is to do the same thing to both sides of the equation