## Direct and Inverse Proportion

A directly proportional relationship follows the rule:

$$
y=k x
$$

where k is a constant multiplier

$$
\text { if } y=10 \text { when } x=2
$$

we can find $k$ :

$$
\begin{aligned}
10 & =2 k \\
k & =5
\end{aligned}
$$

The formula is therefore:

$$
y=5 x
$$

An inverse proportional relationship follows the rule:

$$
y=\frac{k}{x}
$$

where k is a constant multiplier

$$
\begin{gathered}
\text { if } y=10 \text { when } x=2 \\
\text { we can find } k \text { : } \\
\begin{array}{c}
10=\frac{k}{2} \\
k=20
\end{array}
\end{gathered}
$$

The formula is therefore:

$$
y=\frac{20}{x}
$$

