Timester Challenge

Inverse Proportion

y is inversely proportional to x^2.
Complete the table below.

x	-2	-1	1		5
y				$\frac{1}{4}$	$\frac{1}{25}$

Bronze

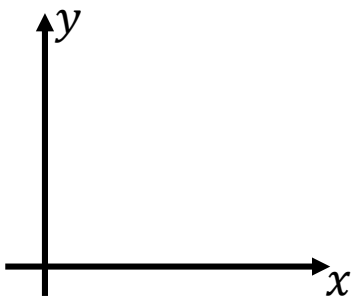
y is indirectly proportional to x.
y is 0.4 when x is 5.
Find a formula linking x and y.

Silver

The speed (S) in which a camera can take a photo varies inversely with the ISO (I) settings on your camera. Martin sets his ISO setting at 4 and it takes him 2 deciseconds to take a photo. If he set the ISO at 2 would it take him more or less time to take a photo? Explain your answer.

More ☐ Less ☐

Sketch a graph on the axis that shows y is indirectly proportional to x.



Bronze

y is indirectly proportional to $\sqrt{x}$
Work out the value of a.

x	9	a
y	0.5	1

Silver

Gold

Timester Challenge

Inverse Proportion

Answers

y is inversely proportional to x^2.
Complete the table below.

x	-2	-1	1	2	5
y	$\frac{1}{4}$	1	1	$\frac{1}{4}$	$\frac{1}{25}$

Bronze

y is indirectly proportional to x.
y is 0.4 when x is 5.
Find a formula linking x and y.

$y \propto \frac{1}{x}$

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

$0.4 = \frac{k}{5}$

$k = 0.4 \times 5 = 2$

Therefore

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

Silver

The speed (S) in which a camera can take a photo varies inversely with the ISO (I) settings on your camera. Martin sets his ISO setting at 4 and it takes him 2 deciseconds to take a photo. If he set the ISO at 2 would it take him more or less time to take a photo? Explain your answer.

More ☑ Less ☐

$S \propto \frac{1}{I}$

$S = \frac{k}{I}$

$2 = \frac{k}{4}$

$k = 2 \times 4 = 8$

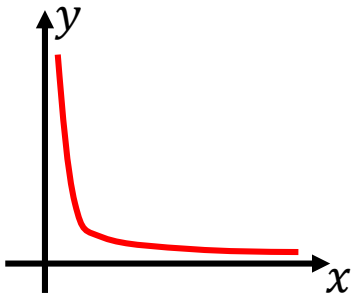
$S = \frac{8}{I}$

$S = \frac{8}{2}$

$S = 4$ *deciseconds*

Gold

Sketch a graph on the axis that shows y is indirectly proportional to x.



Bronze

y is indirectly proportional to $\sqrt{x}$
Work out the value of a.

x	9	2.25
y	0.5	1

$y \propto \frac{1}{\sqrt{x}}$

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

$0.5 = \frac{k}{\sqrt{9}}$

$k = 0.5 \times 3 = 1.5$

$y = \frac{1.5}{\sqrt{x}}$

$1 = \frac{1.5}{\sqrt{x}}$

$\sqrt{x} = \frac{1.5}{1} = 1.5$

$x = 1.5^2 = 2.25$

Therefore

$y = \frac{1.5}{\sqrt{x}}$ and $a = 2.25$

Silver