

## Inverse Proportion

Question	Equation	Find $k$	New Equation	Find Value using Equation
$A$ is inversely proportional to $B$ , when $A = 5, B = 6$ . Find $A$ when $B = 10$ .	$A = \frac{k}{B}$	$5 = \frac{k}{6}$ so $k = 30$	$A = \frac{30}{B}$	$A = \frac{30}{10} = 3$
(a) $y$ is inversely proportional to $x$ , when $y = 12, x = 5$ . Find $y$ when $x = 4$ .	$y = \frac{k}{x}$	$12 = \frac{k}{5}$ so $k = 60$	$y = \frac{60}{x}$	$y = \frac{60}{4} = 15$
(b) $N$ is inversely proportional to $L$ , when $N = 2.5, L = 8$ . Find $N$ when $L = 4$ .	$N = \frac{k}{L}$	$2.5 = \frac{k}{8}$ so $k = 20$	$y = \frac{20}{x}$	$y = \frac{20}{4} = 5$
(c) $y$ is inversely proportional to $x$ . If $y = 5$ when $x = 8$ , find $y$ when $x = 20$	$y = \frac{k}{x}$	$5 = \frac{k}{8}$ so $k = 40$	$y = \frac{40}{x}$	$y = \frac{40}{8} = 5$
(d) $A$ is inversely proportional to $B$ and when $A = 12, B = 3$ . Find $A$ when $B = 10$	(e) $h$ is inversely proportional to $V$ and $h = 36$ when $V = 8$ . Find $h$ when $V = 20$	(f) $y$ is inversely proportional to $x$ , and $y = 0.2$ when $x = 5$ . Find $x$ when $y = 25$	(g) $y$ is inversely proportional to $x$ . When $x = 2, y = 64$ . Find $x$ when $y = 80$ .	
$A = \frac{k}{B}$ $12 = \frac{k}{3}$ so $k = 36$ $A = \frac{36}{B}$ $A = \frac{36}{10} = 3.6$	$h = \frac{k}{V}$ $36 = \frac{k}{8}$ so $k = 288$ $h = \frac{288}{V}$ $h = \frac{288}{20} = 14.4$	$y = \frac{k}{x}$ $0.2 = \frac{k}{5}$ so $k = 1$ $y = \frac{1}{x}$ $25 = \frac{1}{x}$ so $x = \frac{1}{25}$	$y = \frac{k}{x}$ $64 = \frac{k}{2}$ so $k = 128$ $y = \frac{128}{x}$ $80 = \frac{128}{x}$ so $x = 1.6$	