

Question	Equation	Find k	New Equation	Find Value using Equation	
$A$ is inversely proportional to $B^2$ , and when $A = 6, B = 5$ . Find $A$ when $B = 2$	$A = \frac{k}{B^2}$	$6 = \frac{k}{5^2}$ so $k = 150$	$A = \frac{150}{B^2}$	$A = \frac{150}{2^2} = 37.5$	
(a) $y$ is inversely proportional to $x^2$ and when $y = 10, x = 2$ . Find $y$ when $x = 5$	$y = \frac{k}{x^2}$	$10 = \frac{k}{2^2}$ $k = 40$	$y = \frac{40}{x^2}$	$y = \frac{40}{5^2}$ $y = 1.6$	
(b) $y$ is inversely proportional to $x^3$ , and $y = 5$ when $x = 3$ . Find $y$ when $x = 10$	$y = \frac{k}{x^3}$	$5 = \frac{k}{3^3}$ $k = 135$	$y = \frac{135}{x^3}$	$y = \frac{135}{10^3}$ $y = 0.135$	
(c) $A$ is inversely proportional to $\sqrt{B}$ and when $A = 90, B = 9$ . Find $A$ when $B = 25$	$A = \frac{k}{\sqrt{B}}$	$90 = \frac{k}{\sqrt{9}}$ $k = 270$	$A = \frac{270}{\sqrt{B}}$	$A = \frac{270}{\sqrt{25}}$ $A = 54$	
(d) $h$ is inversely proportional to $V^2$ and $h = 3$ when $V = 8$ . Find $h$ when $V = 4$	$h = \frac{k}{V^2}$ $3 = \frac{k}{8^2}$ $k = 192$ $h = \frac{192}{V^2}$ $h = \frac{192}{4^2}$ $h = 12$	$B = \frac{k}{\sqrt{C}}$ $18 = \frac{k}{\sqrt{16}}$ $k = 72$ $B = \frac{72}{\sqrt{C}}$ $B = \frac{72}{\sqrt{0.36}}$ $B = 120$	(e) $B$ is inversely proportional to $\sqrt{C}$ , and when $B = 18, C = 16$ . Find $B$ when $C = 0.36$	(f) $y$ is inversely proportional to $x^3$ , and $y = 20$ when $x = 6$ . Find $x$ when $y = 67.5$	(g) $y$ is inversely proportional to $\sqrt[3]{x}$ . When $x = 8, y = 4$ , find $x$ when $y = 0.8$
				$y = \frac{k}{x^3}$ $20 = \frac{k}{6^3}$ $k = 4320$ $y = \frac{4320}{x^3}$ $67.5 = \frac{4320}{x^3}$ $x = 4$	$y = \frac{k}{\sqrt[3]{x}}$ $4 = \frac{k}{\sqrt[3]{8}}$ $k = 8$ $y = \frac{8}{\sqrt[3]{x}}$ $0.8 = \frac{8}{\sqrt[3]{x}}$ $\sqrt[3]{x} = 10$ $x = 1000$