

Direct Proportion

| Question | General Equation | Find k | New Equation | Find Value using Equation |
|--|---|--|---|--|
| A is directly proportional to B^2 , when $A = 45$, $B = 3$. Find A when $B = 7$ | $A = k \times B^2$ | $45 = k \times 3^2$ so $k = 5$ | $A = 5B^2$ | $A = 5 \times 7^2$ $A = 245$ |
| (a) y is directly proportional to x^2 , and $y = 270$ when $x = 3$. Find y when $x = 5$ | $y = k \times x^2$ | $270 = k \times 3^2$ so $k = 30$ | $y = 30x^2$ | $y = 30 \times 5^2$ $y = 750$ |
| (b) N is directly proportional to L^3 , when $N = 1280$, $L = 4$. Find N when $L = 3$ | $N = k \times L^3$ | $1280 = k \times 4^3$ so $k = 20$ | $N = 20L^3$ | $N = 20 \times 3^3$ $N = 540$ |
| (c) A is directly proportional to \sqrt{B} and when $A = 90$, $B = 9$. Find A when $B = 25$ | $A = k \times \sqrt{B}$ | $90 = k \times \sqrt{9}$ so $k = 30$ | $A = 30\sqrt{B}$ | $A = 30 \times \sqrt{25}$ $y = 150$ |
| (d) A is directly proportional to B^2 and when $A = 8$, $B = 4$. Find A when $B = 0.5$ | (e) h is directly proportional to \sqrt{w} and $h = 15$ when $w = 4$. Find h when $w = 64$ | (f) A is directly proportional to V^3 and when $A = 400$, $V = 2$. Find V when $A = 6250$ | (g) y is directly proportional to $\sqrt[3]{x}$. When $x = 8$, $y = 64$. Find x when $y = 128$ | |
| $A = k \times B^2$ $8 = k \times 4^2$ $k = 0.5$ $A = 0.5B^2$ $A = 0.5 \times 0.5^2$ $A = 0.125$ | $h = k \times \sqrt{w}$ $15 = k \times \sqrt{4}$ $k = 7.5$ $h = 7.5\sqrt{w}$ $h = 7.5 \times \sqrt{64}$ $h = 60$ | $A = k \times V^3$ $400 = k \times 2^3$ $k = 50$ $A = 50V^3$ $6250 = 50 \times V^3$ $V = 5$ | $y = k \times \sqrt[3]{x}$ $64 = k \times \sqrt[3]{8}$ $k = 32$ $y = 32\sqrt[3]{x}$ $128 = 32 \times \sqrt[3]{x}$ $x = 64$ | |