# Crack the Code — Direct Proportion

| | | | |
|---|---|---|---|
| **A** | $y$ is directly proportional to $x$. When $x = 12, y = 300$. The formula linking $y$ and $x$ is $y = \square\ x$ | **B** | $a$ is directly proportional to $b^2$. When $b = 5, a = 450$. The formula linking $a$ and $b$ is $a = \square\ b^2$ |
| **C** | $s$ is directly proportional to $t$. When $t = 10, s = \frac{1}{2}$. Find the value of $s$ when $t = 80$. | **D** | $y$ is directly proportional to $x^3$. When $x = 4, y = 1280$. The formula linking $y$ and $x$ is $y = \square\ x^3$ |
| **E** | $a$ is directly proportional to $\sqrt{b}$. When $b = 49, a = 28$. The formula linking $a$ and $b$ is $a = \square\ \sqrt{b}$ | **F** | $c$ is directly proportional to the square of $d$. When $d = 3, c = 45$. Find the value of $c$ when $d = 6$. |
| **G** | $f$ is directly proportional to the cube of $g$. When $g = 10$, $f = 2500$. Find the value of $f$ when $g = 4$. | **H** | $p$ is directly proportional to $\sqrt[3]{t}$. When $t = 512, p = 120$. The formula linking $p$ and $t$ is $p = \square\ \sqrt[3]{t}$ |
| **I** | The mass $M$ in grams of a mouse is directly proportional to its length $L$ in cm. A mouse with length $20$ cm has a mass $30$ g. Find the length of a mouse with a mass of $48$ g. | **J** | $y$ is directly proportional to the square root of $x$. When $x = 9$, $y = 42$. Find the value of $y$ when $x = 225$. |
| **K** | $w$ is directly proportional to the cube root of $v$. When $v = 729$, $w = 22.5$. Find the value of $v$ when $w = 10$. | **L** | $a$ is directly proportional to $b^3$. $b$ is directly proportional to the square root of $c$. When $c = 16$, $a = 448$. Find the value of $c$ when $a = 1512$ |

To get the three-digit code, add all your answers together.