

1. If y varies inversely as x , and $y = 3$ when $x = 6$, find x when $y = 18$.

$$x = 1$$

2. If z is inversely proportional to r , and $z = 32$ when $r = 1.5$, find r when $z = 8$.

$$r = 6$$

3. If w is inversely proportional to the square of v , and $w = 3$ when $v = 6$, find w when $v = 3$.

$$w = 12$$

4. If p varies inversely as the square root of q , and $p = 12$ when $q = 36$, find p when $q = 16$.

$$p = 18$$

5. If z is jointly proportional to x and y , and $z = 18$ when $x = 0.4$ and $y = 3$, find z when $x = 1.2$ and $y = 2$.

$$z = 36$$

6. If w is jointly proportional to u and v , and $w = 24$ when $u = 0.8$ and $v = 5$, for what value of u will $w = 18$ when $v = 2$?

$$u = 1.5$$

7. If a varies directly as b and inversely as c , and $a = 10$ when $b = 5$ and $c = 3$, for what value of c will $a = 3$ when $b = 4$?

$$c = 8$$

8. Suppose that r varies directly as p and inversely as q^2 , and that $r = 27$ when $p = 3$ and $q = 2$. Find r when $p = 2$ and $q = 3$.

$$r = 8$$

9. Suppose that z varies jointly as u and v and inversely as w , and that $z = 0.8$ when $u = 8$, $v = 6$, and $w = 5$. Find z when $u = 3$, $v = 10$, and $w = 5$.

$$z = 0.5$$

10. Suppose that w varies directly as z^2 and inversely as xy , and that $w = 10$ when $x = 15$, $y = 2$, and $z = 5$. Find z when $w = 2$, $x = 8$, and $y = 27$.

$$z = 6$$