

Inverse Variation Exit Quiz

Solve problem involving Inverse Variation.

1. If y varies inversely as x , and $y = 35$ when $x = 14$, find x when $y = 15$.

2. If x inversely as the cube root of y , and $x = 27$ when $y = 27$, find x when $y = 8$?

3. Given P varies inversely as Q and that $P = 4$ when $Q = \frac{1}{2}$, find the value of P when $Q = 2\frac{1}{2}$.

4. The time T required to do a job varies inversely as the number of people P working. I take 5 h for 7 bricklayers to complete a certain job. How long will it take 10 bricklayers to complete a job?

5. The time required to drive a fixed distance varies inversely as the speed r . It takes 5 h at a speed of 80 km/h to drive a fixed distance. How long will it take to drive the same distance at a speed of 60 km/h?

Inverse Variation Exit Quiz

Answer:

Solve problem involving Inverse Variation.

1. If y varies inversely as x, and y = 35 when x = 14, find x when y = 15.

Solution:

$$y = \frac{k}{x} \quad 35 = \frac{k}{14} \quad k = (35)(14) = 490 \quad x = \frac{490}{15} = 32\frac{2}{3}$$

2. If x inversely as the cube root of y, and x = 27 when y = 27, find x when y = 8?

Solution:

$$x = \frac{k}{\sqrt[3]{y}} \quad 27 = \frac{k}{\sqrt[3]{27}} \quad k = 27(3) = 81 \quad x = \frac{81}{\sqrt[3]{8}} = 40\frac{1}{2}$$

3. Given P varies inversely as Q and that P = 4 when Q = $\frac{1}{2}$, find the value of P when Q = $2\frac{1}{2}$.

Solution:

$$p = \frac{k}{q} \quad 4 = \frac{k}{\frac{1}{2}} \quad k = 4(1/2) = 2 \quad p = \frac{2}{2\frac{1}{2}} = \frac{4}{5}$$

4. The time T required to do a job varies inversely as the number of people P working. I take 5 h for 7 bricklayers to complete a certain job. How long will it take 10 bricklayers to complete a job?

Solution:

time	bricklayers
5	7
?	10

$$t = \frac{k}{b} \quad 5 = \frac{k}{7} \quad k = 5(7) = 35 \quad t = \frac{35}{10} = 3.5 \quad 3 \text{ hours and 30 minutes}$$

5. The time required to drive a fixed distance varies inversely as the speed r. It takes 5 h at a speed of 80 km/h to drive a fixed distance. How long will it take to drive the same distance at a speed of 60 km/h?

Solution:

time	speed
5	80
?	60

$$t = \frac{k}{s} \quad 5 = \frac{k}{80} \quad k = 80(5) = 400 \quad t = \frac{400}{60} = 6\frac{2}{3} \quad 6 \text{ hours and 40 minutes}$$