

Example 2 (page 55): The time it takes to drive a certain distance varies inversely as the rate of travel. If it takes 4 hours at 50 miles per hour to drive the distance, how long will it take at 40 miles per hour?

$$y = \frac{K}{x}$$

↑ hours ← miles

$$50 \cdot 4 = \frac{K}{50} \cdot 50$$

$$200 = K$$

$$y = \frac{200}{x}$$

$$y = \frac{200}{40}$$

$y = 5$



Oct 24-10:00 AM

P. 308
(pdf 334)
#31-40 all

Oct 24-10:16 AM

1. The weight of a piece of wire is directly proportional to its length. A piece of wire is 25 cm long and has a weight of 6 grams. Another piece of the same wire is 30 cm long. Calculate the weight of the 30 cm piece of wire.

$$y = kx$$

length \rightarrow $y = kx$ \leftarrow Grams

$$\frac{25}{6} = k \left(\frac{6}{6} \right)$$

$$k = \frac{25}{6}$$

$$y = \frac{25}{6} x$$

$$\frac{6}{25} \cdot 30 = \frac{25}{6} x \cdot \frac{6}{25}$$

$$7.2 = x$$

Oct 4-9:24 AM

2. A ball falls vertically after being dropped. The ball falls a distance d meters in a time of t seconds. d is directly proportional to the square of t . The ball falls 20 meters in a time of 2 seconds.

(a) Find a formula for d in terms of t .

Oct 4-9:35 AM

3. The time, T seconds, it takes a water heater to boil some water is directly proportional to the mass of water, m kg, in the water heater. When $m = 250$, $T = 600$

(a) Find T when $m = 400$

Oct 4-9:40 AM