

Wkst: Calculating Speed 2

Name: KEY

1. A train travels from Chicago to New York City, which is 790 miles, in 8.3 hours. What is the speed of the train? (L2)

Given:  
 $x = 790 \text{ miles}$   
 $\Delta t = 8.3 \text{ hrs}$   
 $v = ?$

Soln:  $v = \frac{D}{T} = \frac{790 \text{ miles}}{8.3 \text{ hrs}}$

$v = 95.2 \text{ miles/hr}$

2. A passenger elevator travels from the first floor to the 60<sup>th</sup> floor, a distance of 210 m, in 35 s. What is the elevator's speed? (L2)

Given:  
 $x = 210 \text{ m}$   
 $\Delta t = 35 \text{ s}$   
 $v = ?$

Soln:  $v = \frac{D}{T}$   
 $= \frac{210 \text{ m}}{35 \text{ s}}$

$v = 6 \text{ m/s}$

3. How far does a car travel in 0.75 h if it is moving at a constant speed of 88 km/h? (L2)

Given:  
 $x = ?$   
 $\Delta t = 0.75 \text{ hr}$   
 $v = 88 \text{ km/hr}$

Soln:  $v = \frac{D}{T}$   
 $D = v \cdot T$

$D = (88 \text{ km/hr})(0.75 \text{ hr})$

$D = 66 \text{ km}$

4. A car travels at 16 m/s for 3,600 s, how far did the car travel? (L2)

Given:  
 $x = ?$   
 $\Delta t = 3600 \text{ s}$   
 $v = 16 \text{ m/s}$

Soln:  $v = \frac{D}{T}$   
 $D = v \cdot T$

$D = (16 \text{ m/s})(3600 \text{ s})$

$D = 57,600 \text{ m}$

5. A motorcycle is moving at a constant speed of 40 km/h. How long does it take the motorcycle to travel 10 km? (L2)

Given:  
 $x = 10 \text{ km}$   
 $\Delta t = ?$   
 $v = 40 \text{ km/h}$

Soln:  $v = \frac{D}{T}$   
 $T = \frac{D}{v}$

$T = \frac{10 \text{ km}}{40 \text{ km/h}}$

$T = 0.25 \text{ h}$

6. An Olympic sprinter travels 200 m at 10 m/s, how long did it take the sprinter to finish the race? (L2)

Given:  
 $x = 200 \text{ m}$   
 $\Delta t = ?$   
 $v = 10 \text{ m/s}$

Soln:  $v = \frac{D}{T}$   
 $T = \frac{D}{v}$

$T = \frac{200 \text{ m}}{10 \text{ m/s}}$

$T = 20 \text{ seconds}$

7. The Earth travels  $9.42 \times 10^{11}$  meters when it orbits around the sun in 1 year. 1 year has about 31,558,000 seconds. What is the speed of Earth in m/s? (L4)

Given:  
 $x = 9.42 \times 10^{11} \text{ m}$   
 $\Delta t = 31,558,000 \text{ s}$   
 $v = ? \text{ m/s}$

Soln:  $v = \frac{D}{T}$   
 $= \frac{9.42 \times 10^{11} \text{ m}}{31,558,000 \text{ s}}$

$v = 29,849.8 \text{ m/s}$