

Monday Feb 13, 2012

Velocity Word Problems

Warm-Up

Which type of speed (constant, average, instantaneous) is associated with each situation?

1. The speed of a car stopped at a stop sign.
2. The speed you are going when you put cruise control on in your car.
3. The total distance covered over the total time travelled.

Example 1: Jenny skates to school a distance of 4.5km. Her journey takes 0.62 h. What is her average speed during the trip?

Step 1 : Write down what you know on the left side of your page with symbols and values. As well write what you want to find.

$$\begin{aligned}d &= 4.5 \text{ km} \\t &= 0.62 \text{ h} \\v &= ?\end{aligned}$$

Step 2 :Determine if you need to convert units. If so convert into matching units

do not need to convert in this question

Step 3: Use the formula to solve (Rearrange if necessary)

$$v = \frac{d}{t} = \frac{4.5\text{km}}{0.62\text{h}} = 7.26 \text{ km/h}$$

Step 4: Write a Sentence

Jenny skates an average speed of 7.26 km/h

Example 2:

Josh is trying to find his average speed when riding his bike. He travels a distance of 45 km and it takes him 2.3h, including slowing down for climbing hills. What is his average speed?

Step 1 : Write down what you know on the left side of your page with symbols and values. As well write what you want to find.

$$\begin{aligned}d &= 45 \text{ km} \\t &= 2.3 \text{ h} \\v &= ?\end{aligned}$$

Step 2 :Determine if you need to convert units. If so convert into matching units

do not need to convert

Step 3: Use the formula to solve (Rearrange if necessary)

$$v = \frac{d}{t} = \frac{45\text{km}}{2.3 \text{ h}} = 19.6 \text{ km/h}$$

Josh's average speed on his bike is 19.6km.h

Step 4: Write a Sentence

Example 3:

While on a train trip you see a sign that reads 120km. You decide after seeing several such signs that you are going to measure the time between the next two signs, which are 10km apart. You read the elapsed time as 390.6 s. Determine the speed of the train in kilometers per hour during this time.

Step 1 : Write down what you know on the left side of your page with symbols and values. As well write what you want to find.

$$\begin{aligned}d &= 10\text{km} \\t &= 390.6 \text{ s} \\v &= ? \text{ km/h}\end{aligned}$$

Step 2 :Determine if you need to convert units. If so convert into matching units

$$390.6 \text{ s} \times \frac{1 \text{ min}}{60 \text{ s}} \times \frac{1 \text{ h}}{60 \text{ min}} = 0.11\text{h}$$

must convert s to hours

Step 3: Use the formula to solve (Rearrange if necessary)

$$v = \frac{d}{t} = \frac{10\text{km}}{0.11\text{h}} = 90.91 \text{ km/h}$$

Step 4: Write a Sentence

The train was moving 90.91 km per hour.

pg 358 #1,3a,b,6,7a

Attachments

S10 sig figs answers.notebook

answers extra practice ws significant digits, scientific notation, rearranging and converting.notebook

answers pg 358 #1,3a,b,6,7a.notebook