

## Check Homework

$$d) \underline{14.70 \text{ cm}} \times \frac{1 \text{ m}}{100 \text{ cm}} = \boxed{0.1470 \text{ m}}$$

$$g) 2.325 \text{ hr} \times \frac{60 \text{ min}}{1 \text{ hr}} = 134.1 \text{ min}$$

$$134.1 \text{ min} \times \frac{60 \text{ s}}{1 \text{ min}} = \boxed{8046 \text{ s}}$$

# Speed, Distance, Time

**Distance ( $d$ )** is the amount of space between two objects or points.

The SI unit of distance is the meter (m), but it can also be represented as mm, cm, km, etc.

Units: m, cm, mm, km, etc.

**Time ( $t$ )** - is the duration between two events

Is measured in seconds (s), minutes (min) or hours (h)

Units: s, min, hr

# Speed

$$\text{Speed (v)} = \frac{\text{distance}}{\text{time}} = \frac{d}{t}$$

$$v = \frac{d}{t}$$

represented as km/h , m/s etc

There are various ways we can describe speed

Instantaneous Speed  
Constant Speed  
Average Speed

## Instantaneous Speed

The speed at which an object is travelling at a particular instant.

i.e. If a car is stopped at a stop light its instantaneous speed is 0km/h  
when a car passed a truck its speed was 100km/h at that specific point in time.

## Constant Speed

If instantaneous speed remains the same over a period of time we say the car is travelling at a constant speed.

Ex. cruise control

The average speed of an object is the same as its instantaneous speed if that object has a constant speed.

## Average Speed ( $v_{av}$ )

- is the total distance (d) divided by the total time (t) of the trip.

$$\text{Formula : } v = \frac{\Delta d}{\Delta t} = \frac{d_2 - d_1}{t_2 - t_1}$$

use  $d_2 - d_1$  or  $t_2 - t_1$  when you have more than one distance or more than one time

$$\Delta d = 120 \text{ km}$$

$$\Delta t = 1.5 \text{ hr}$$

$$d_1 = 50 \text{ km}$$

$$d_2 = 120 \text{ km}$$

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

$$d = 4.5 \text{ km}$$

$$t = 0.62 \text{ hr}$$

$$v = ?$$

$$v = \frac{d}{t}$$

$$v = \frac{4.5 \text{ km}}{0.62 \text{ hr}}$$

$$v = 7.3 \text{ km/hr}$$

**Step 2 :**

**Use the formula to solve (Rearrange if necessary)**

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?

$$d = 45 \text{ km}$$

$$t = 2.3 \text{ h}$$

$$v = ?$$

$$19.565$$

$$v = \frac{d}{t}$$

$$v = \frac{45 \text{ km}}{2.3 \text{ hr}}$$

$$v = 20. \text{ km/hr}$$

# Homework

p. 358 #1-3b

## Attachments

---

pg 349 3,4,6,7,9 answers.notebook