

Check Homework

3. a) ✓✓✓
 c) 50.0 m/s
 $50.$
 $50?$

4. a) 32.674 km

32.7 km

b) 0.003922 g

0.00392 g

c) 107.51 s

108 s

6 a) $22.4 \text{ h} \times \frac{0.1 \text{ mm}}{\text{h}} = 2.24 \text{ mm}$

b) $\frac{465 \text{ km}}{5.21 \text{ h}} = 89.3 \frac{\text{km}}{\text{h}}$

9. a) $34 \text{ min} \rightarrow \text{hours}$ $1 \text{ h} = 60 \text{ min}$

$34 \text{ min} \times \frac{1 \text{ hr}}{60 \text{ min}} = 0.57 \text{ h}$

b) $0.510 \text{ km} \rightarrow \text{m}$ $1000 \text{ m} = 1 \text{ km}$

$0.510 \text{ km} \times \frac{1000 \text{ m}}{1 \text{ km}} = 510. \text{ m}$

Speed, Distance, Time

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

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

Time - (t) is the duration between two events

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

Speed

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

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 velocity

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?

Step 1 :

Write down what you know on the left side with symbols and values. As well write what you want to find.

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

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

$$v = ?$$

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

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

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

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?

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

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

$$v = ?$$

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

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

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

Homework

p. 358 #1-3a,b

Attachments

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