UNIT 18 *Speed, Distance and Time* Overhead Slides

Overhead Slides

OS 18.1 *Average Speed*

$$\text{Average speed} = \frac{\text{Distance}}{\text{Time}}$$

Example 1

A car travels 160 miles in 4 hours.

$$\text{Average speed} = \frac{\qquad}{\qquad}$$

$$=$$

Example 2

A snail moves 15 m in 3 hours.

$$\text{Average speed} = \frac{\qquad}{\qquad}$$

$$=$$

Example 3

Tony cycles 72 km in 8 hours.

$$\text{Average speed} = \frac{\qquad}{\qquad}$$

$$=$$

OS 18.2 *Speed, Distance, Time*

$$\textit{Speed} = \frac{\text{Distance}}{\text{Time}} \qquad \textit{Time} = \frac{\text{Distance}}{\text{Speed}}$$

$$\textit{Distance} = \text{Speed} \times \text{Time}$$

Example 1

A train travels for 3 hours at 75 mph. Calculate the distance it travels.

Distance = ————————

=

Example 2

A plane flies 480 miles in 3 hours. Calculate the speed of the plane.

Speed = ————————

=

Example 3

A car travels at 50 mph. How long will it take to travel $137\frac{1}{2}$ miles?

Time = ————————

=

OS 18.3 *Mixed Units for Time*

Complete the statements:

1. 1 hour 20 minutes = $1\frac{\quad}{\quad}$ hours = hours

2. 3 hours 5 minutes = $3\frac{\quad}{\quad}$ hours = hours

3. 2 hours 35 minutes = hours = hours

4. 5 hours 12 minutes = hours = hours

5. 1.7 hours = 1 hour $\times$ 60 minutes

   = 1 hour minutes

6. 3.2 hours = 3 hours $\times$ 60 minutes

   = 3 hours minutes

7. 4.35 hours = 4 hours $\times$ 60 minutes

   = 4 hours minutes

OS 18.4 *Mixed Units for Speed*

Complete the statements:

1. 5 m/s $=$ $\dfrac{5\times}{\qquad}$ km/h

$=$ km/h

2. 16 m/s $=$ $\dfrac{16\times}{\qquad}$ km/h

$=$ km/h

$=$ $\times\ \dfrac{5}{8}$ mph

$=$ mph

3. 18 km/h $=$ $\dfrac{1800\times}{\qquad}$ m/s

$=$ m/s

OS 18.5 *Mixed Units in Context*

1. Alan cycles 18 miles in 1 hour 48 minutes.
Calculate his average speed.

$$1 \text{ hour } 48 \text{ minutes} = 1\frac{48}{60} \text{ hours}$$

$$= \quad \text{hours}$$

$$\text{Average speed} = 18 \div$$

$$= \quad \text{mph}$$

2. How long does it take Julie to walk 10 miles at an average speed of 3 mph ?

$$\text{Time} = \frac{10}{\quad}$$

$$= \quad \text{hours}$$

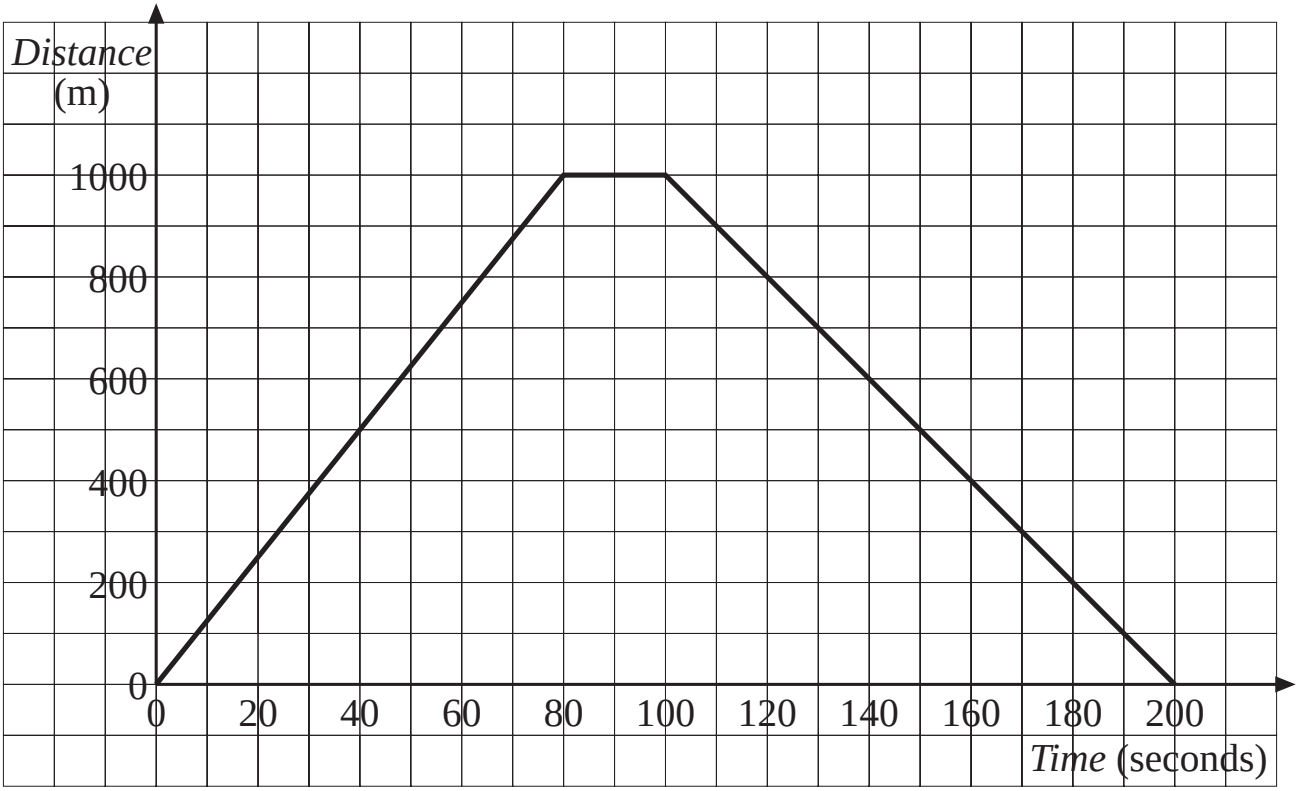
$$= \quad \text{hours} \times 60 \text{ minutes}$$

$$= \quad \text{hours} \quad \text{minutes}$$

OS 18.6 *Graph for Example 1*

Example 1

The graph shows how far a child is from home.



(a) Describe how the child moves.

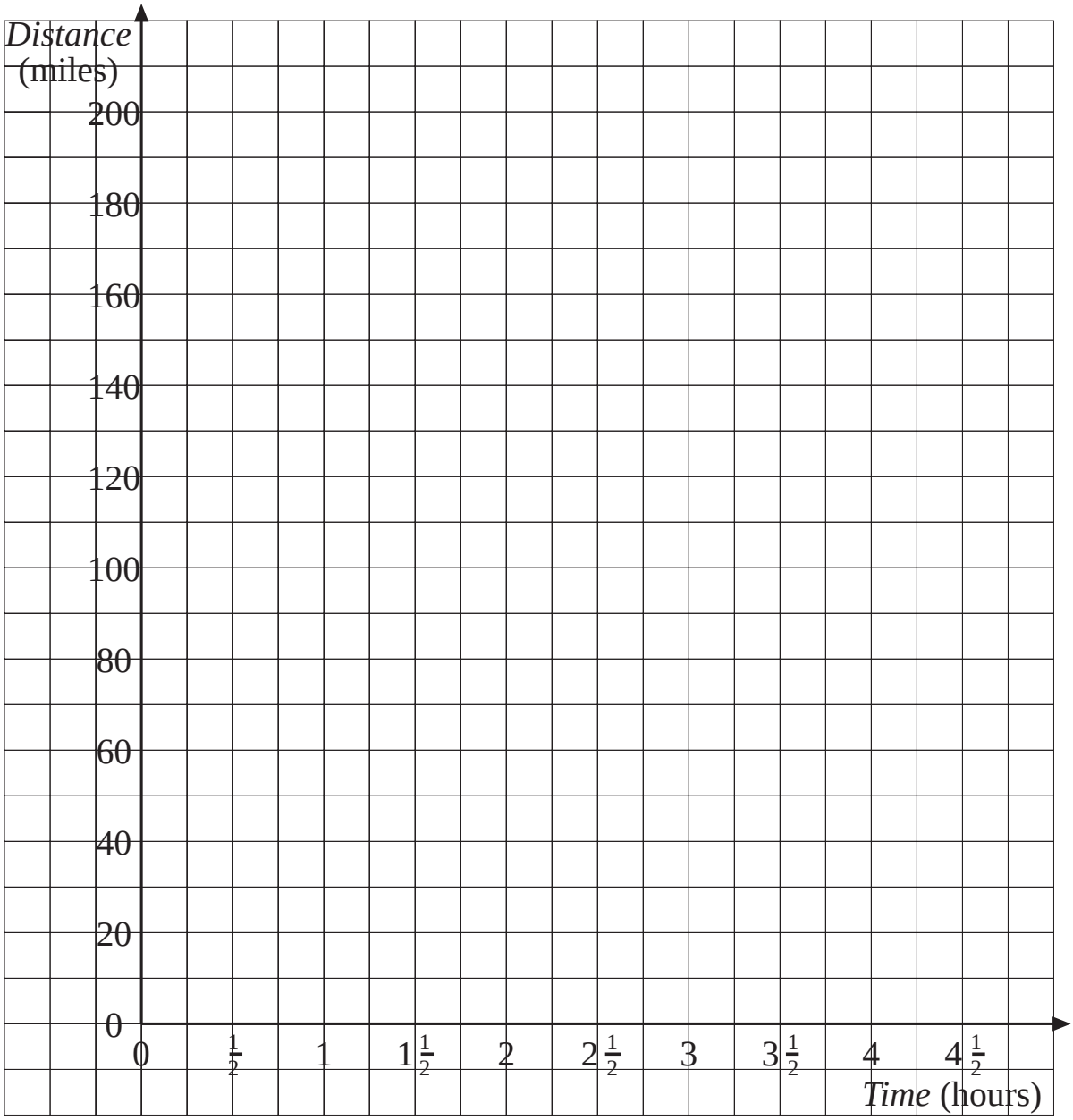
(b) Calculate the speed of the child on each part of the journey.

OS 18.7 *Graph for Example 2*

Example 2

On a journey, Rebecca drives at 50 mph for 2 hours, rests for 1 hour and then drives another 70 miles in $1\frac{1}{2}$ hours.

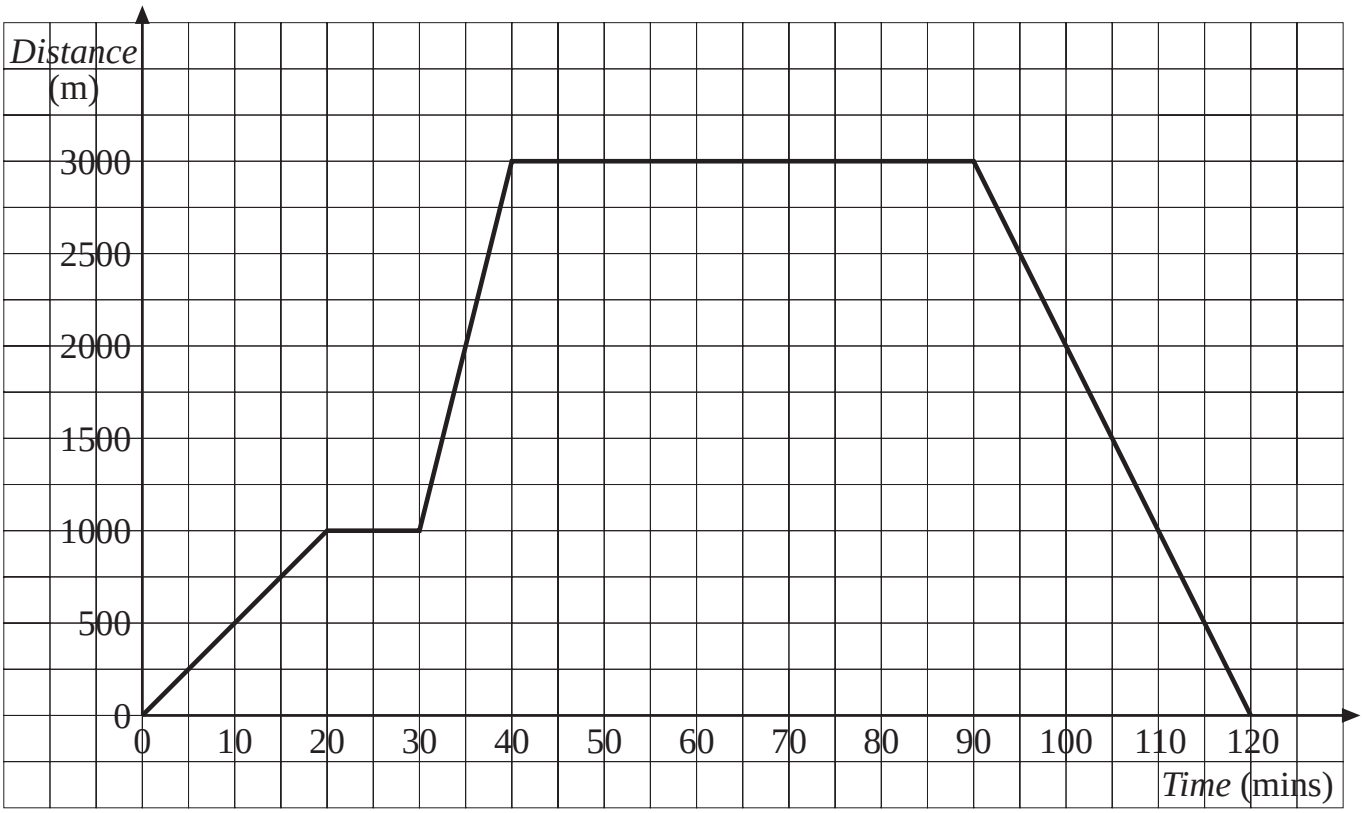
Draw a distance-time graph to illustrate this journey.



OS 18.8 *Graph for Example 3*

Example 3

The graph shows how Tom's distance from home varies with time, when he visits Ian.



(a) How long does Tom spend at Ian's?

(b) How far is it from Tom's home to Ian's?

(c) For how long does Tom stop on the way to Ian's?

(d) On which part of the journey does Tom travel the fastest?

(e) How fast does Tom walk on the way back from Ian's?

OS 18.9 *Goal Scoring Rate*

Bob Bootit scored 45 goals in 25 football matches.

Calculate Bob's scoring rate in goals per minute.

$$\text{Rate} = \frac{}{25} \text{ goals / match}$$

$$= \text{ goals / match}$$

$$= \frac{}{1.5} \text{ goals / hour}$$

$$= \text{ goals / hour}$$

$$= \frac{}{60} \text{ goals / minute}$$

$$= \text{ goals / minute}$$