

UNIT 18 *Speed, Distance and Time* **Extra Exercises 18.1**

1. A train travels 240 miles in 3 hours. Calculate the average speed of the train in mph.
2. A car travels 180 miles in 4 hours. Calculate the average speed of the car in mph.
3. A child runs 200 metres in 40 seconds. Calculate the average speed of the child in m/s.
4. A worm travels a distance of 40 m in 20 minutes. Calculate the average speed of the worm in m/minute.
5. Ali cycles 40 km in 5 hours. What is his average speed in km/h?
6. Tony walks 24 km in 6 hours.
 - (a) What is his average speed in km/h?
 - (b) If he had taken 2 hours longer, what would have been his average speed?
7. Jon leaves home at 6:00 a.m. and arrives at his brother's house at 11:00 a.m. What is his average speed, in mph, if he had travelled 325 miles?
8. On one day a train covers 300 miles in 6 hours. On another day the same journey takes 8 hours. Calculate, in mph, the difference in the average speed of the train on the two days.

UNIT 18 *Speed, Distance and Time* **Extra Exercises 18.2**

1. How far would you travel if you drove at a speed of:
 - (a) 70 mph for 5 hours.
 - (b) 65 mph for 4 hours,
 - (c) 35 mph for 2 hours,
 - (d) 60 mph for $2\frac{1}{2}$ hours,
 - (e) 52 mph for $3\frac{1}{2}$ hours ?

2. How long does it take to travel:
 - (a) 320 miles at 80 mph,
 - (b) 350 miles at 70 mph,
 - (c) 275 miles at 50 mph,
 - (d) 168 miles at 48 mph ?

3. Val drives 250 miles in 5 hours.
 - (a) Calculate her average speed in mph.
 - (b) How far could she travel in $6\frac{1}{2}$ hours?
 - (c) How long would it take her to travel 125 miles?

4. Dave runs 2000 m in 25 minutes.
 - (a) How far could he run in 1 hour?
 - (b) How long would it take him to run 3000 m?

UNIT 18 *Speed, Distance and Time* **Extra Exercises 18.3**

1. Change the following times to hours and minutes:
 - (a) 1.4 hours
 - (b) 3.25 hours
 - (c) 2.35 hours
 - (d) 4.65 hours

2. Change the following times from hours and minutes to fractions
(e.g. 1 hour 30 minutes = $1\frac{1}{2}$ hours):
 - (a) 1 hour 18 minutes
 - (b) 3 hours 42 minutes
 - (c) 6 hours 4 minutes
 - (d) 3 hours 5 minutes

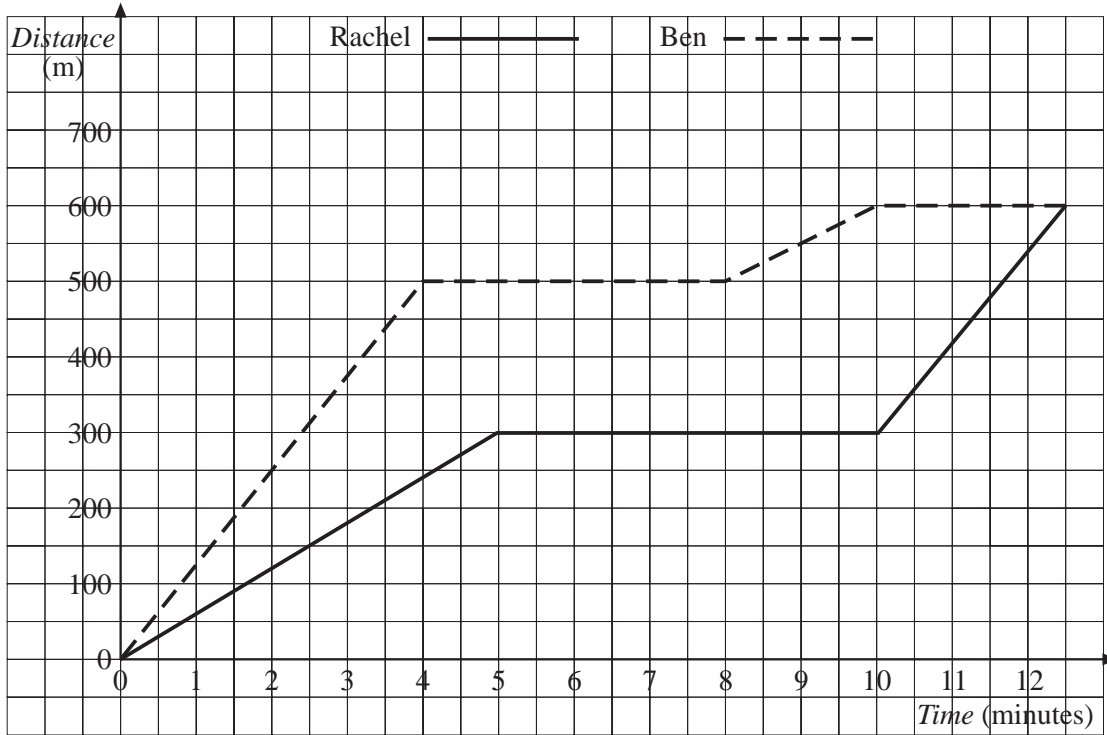
3. Jason drives 54 miles in $1\frac{1}{2}$ hours. What is his average speed in mph?

4. Sarah cycles 13 miles in 1 hour and 5 minutes. What is her average speed in mph?

5. If you were to drive 60 miles in the following times, what would be your average speed in mph?
 - (a) $1\frac{1}{2}$ hours,
 - (b) $1\frac{1}{4}$ hours,
 - (c) 1 hour 20 minutes,
 - (d) 1 hour 40 minutes,
 - (e) 50 minutes.

UNIT 18 *Speed, Distance and Time* Extra Exercises 18.4

1. The graph shows how Rachel and her brother, Ben, walk to school.



Answer the following questions, giving all speeds in metres/minute.

- (a) How far do they walk to get to school?
- (b) How long does it take Ben to get to school?
- (c) How long does it take Rachel to get to school?
- (d) For how long does Ben stop on the way to school?
- (e) For how long does Rachel stop on the way to school?
- (f) Calculate Ben's speed on the first part of his journey.
- (g) Calculate his speed on the last part of his journey.
- (h) Calculate Rachel's speed on the first part of her journey.
- (i) Calculate her speed on the last part of her journey.
- (j) Calculate the average speed at which Ben travels on his way to school.
- (k) Calculate the average speed at which Rachel travels on her way to school.
- (l) Convert your answers to parts (h), (i), (j) and (k) to m/s.

UNIT 18 *Speed, Distance and Time* **Extra Exercises 18.5**

1. Baz scores 24 goals in 20 football matches. Each match lasts $1\frac{1}{2}$ hours.
Calculate the average number of goals he scores:
 - (a) per match,
 - (b) per hour.

2. Kate earns £60 for working 15 hours.
 - (a) How much is she paid per hour?
 - (b) How much would she earn if she worked for $21\frac{1}{2}$ hours?
 - (c) How long would she have to work to earn £135 ?

3. Andrew works in a factory, packing boxes. He can pack 72 boxes in 8 hours.
 - (a) How many boxes does he pack on average in one hour?
 - (b) How long would he take to pack 117 boxes?
 - (c) How many boxes could he pack in 1 hour 20 minutes ?

4. Annie earns £43.20 for working 12 hours.
 - (a) How much is she paid per hour?
 - (b) How much would she earn for working $10\frac{1}{2}$ hours?
 - (c) For how long would she have to work to earn £54 ?

5. A builder buys 2000 bricks for £140.
 - (a) What is the cost of 1 brick?
 - (b) How many bricks could he buy for £350 ?
 - (c) What would be the cost of 7500 bricks?

Extra Exercises 18.1 Answers

- 80 mph
- 45 mph
- 5 m/s
- 2 m/minute
- 8 km/h
- (a) 4 km/h (b) 3 km/h
- 65 mph
- 12.5 mph

Extra Exercises 18.2 Answers

- (a) 350 miles (b) 260 miles (c) 70 miles
(d) 150 miles (e) 182 miles
- 4 hours (b) 5 hours (c) $5\frac{1}{2}$ hours (d) $3\frac{1}{2}$ hours
- (a) 50 mph (b) 325 miles (c) $2\frac{1}{2}$ hours
- (a) 4800 m (b) $37\frac{1}{2}$ minutes

Extra Exercises 18.3 Answers

- (a) 1 hour 24 minutes (b) 3 hours 15 minutes
(c) 2 hours 21 minutes (d) 4 hours 39 minutes
- $1\frac{3}{10}$ hours (b) $3\frac{7}{10}$ hours (c) $6\frac{1}{15}$ hours (d) $3\frac{1}{12}$ hours
- 36 mph
- 12 mph
- (a) 40 mph (b) 48 mph (c) 45 mph
(d) 36 mph (e) 72 mph

Extra Exercises 18.4 Answers

1. (a) 600 m (b) 10 minutes (c) $12\frac{1}{2}$ minutes
(d) 4 minutes (e) 5 minutes (f) 125 metres/minute
(g) 50 metres/minute (h) 60 metres/minute (i) 120 metres/minute
(j) 60 metres/minute (k) 48 metres/minute (l) 1 m/s, 2 m/s, 1 m/s, 0.8 m/s

Extra Exercises 18.5 Answers

1. (a) 1.2 goals/match (b) 0.8 goals/hour
2. (a) £4 per hour (b) £86 (c) $33\frac{3}{4}$ hours
3. (a) 9 boxes/hour (b) 13 hours (c) 12 boxes
4. (a) £3.60 per hour (b) £37.80 (c) 15 hours
5. (a) 7p (b) 5000 bricks (c) £525