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 to 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,

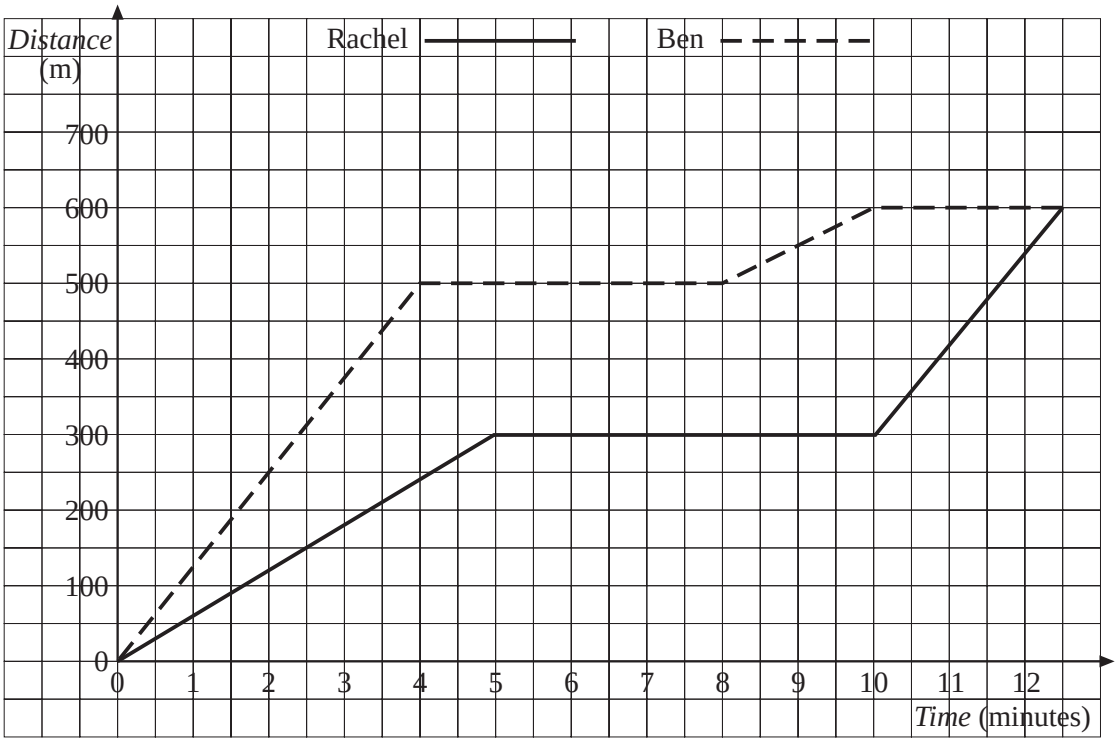
   (c) 1 hour 20 minutes,

   (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

1. 80 mph
2. 45 mph
3. 5 m/s
4. 2 m/minute
5. 8 km/h
6. (a) 4 km/h (b) 3 km/h
7. 65 mph
8. 12.5 mph

Extra Exercises 18.2 Answers

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

Extra Exercises 18.3 Answers

1. (a) 1 hour 24 minutes (b) 3 hours 15 minutes
   (c) 2 hours 21 minutes (d) 4 hours 39 minutes
2. $1\frac{3}{10}$ hours (b) $3\frac{7}{10}$ hours (c) $6\frac{1}{15}$ hours (d) $3\frac{1}{12}$ hours
3. 36 mph
4. 12 mph
5. (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