Name:

Exam Style Questions

Travel Graphs

Corbettmaths

Ensure you have: Pencil, pen, ruler, protractor, pair of compasses and eraser

You may use tracing paper if needed

Guidance

1. Read each question carefully before you begin answering it.
2. Don't spend too long on one question.
3. Attempt every question.
4. Check your answers seem right.
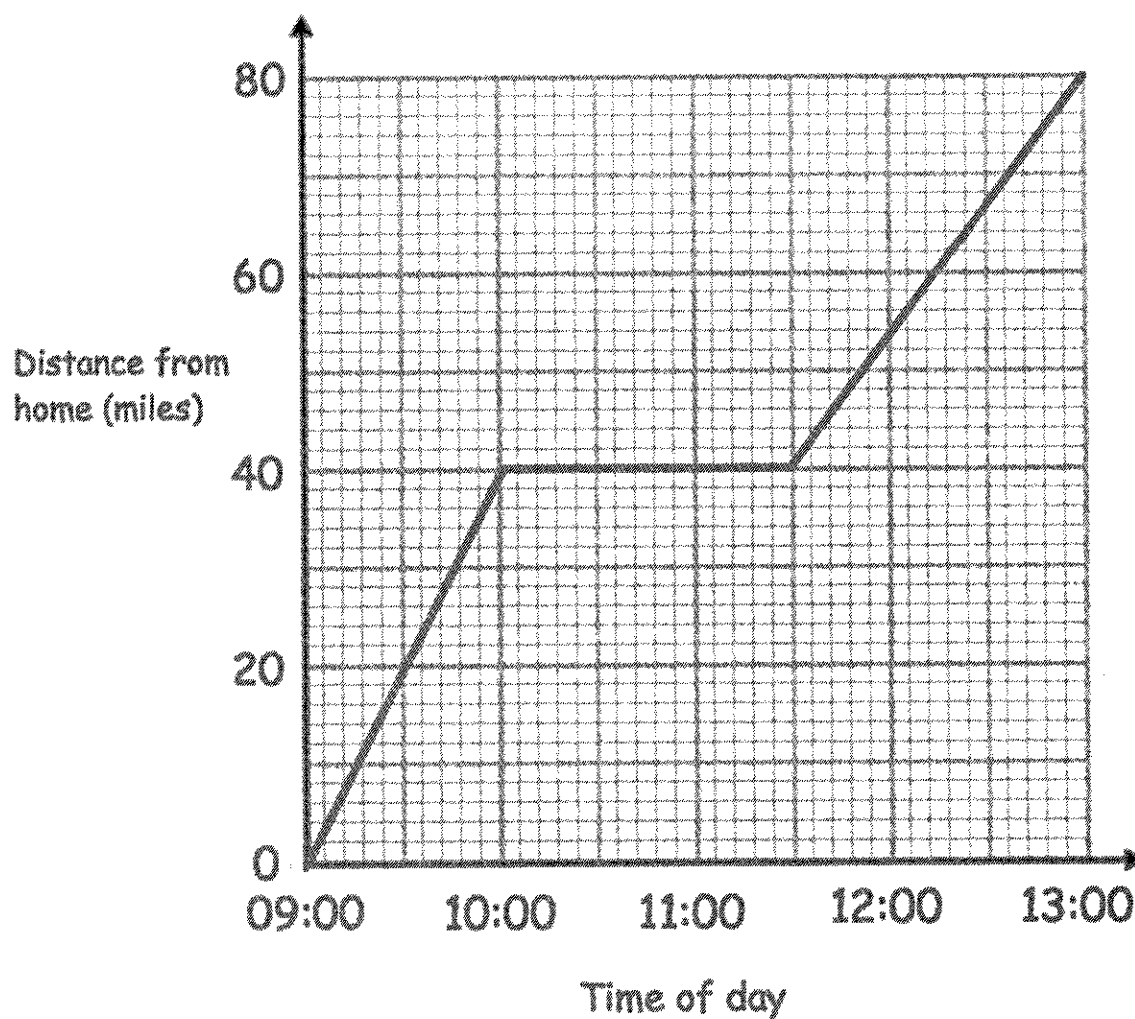5. Always show your workings

Revision for this topic

www.corbettmaths.com/contents

Video 171

1. Edward drove 80 miles from his home to London.
   He stopped and visited his friend Nicola on the way.

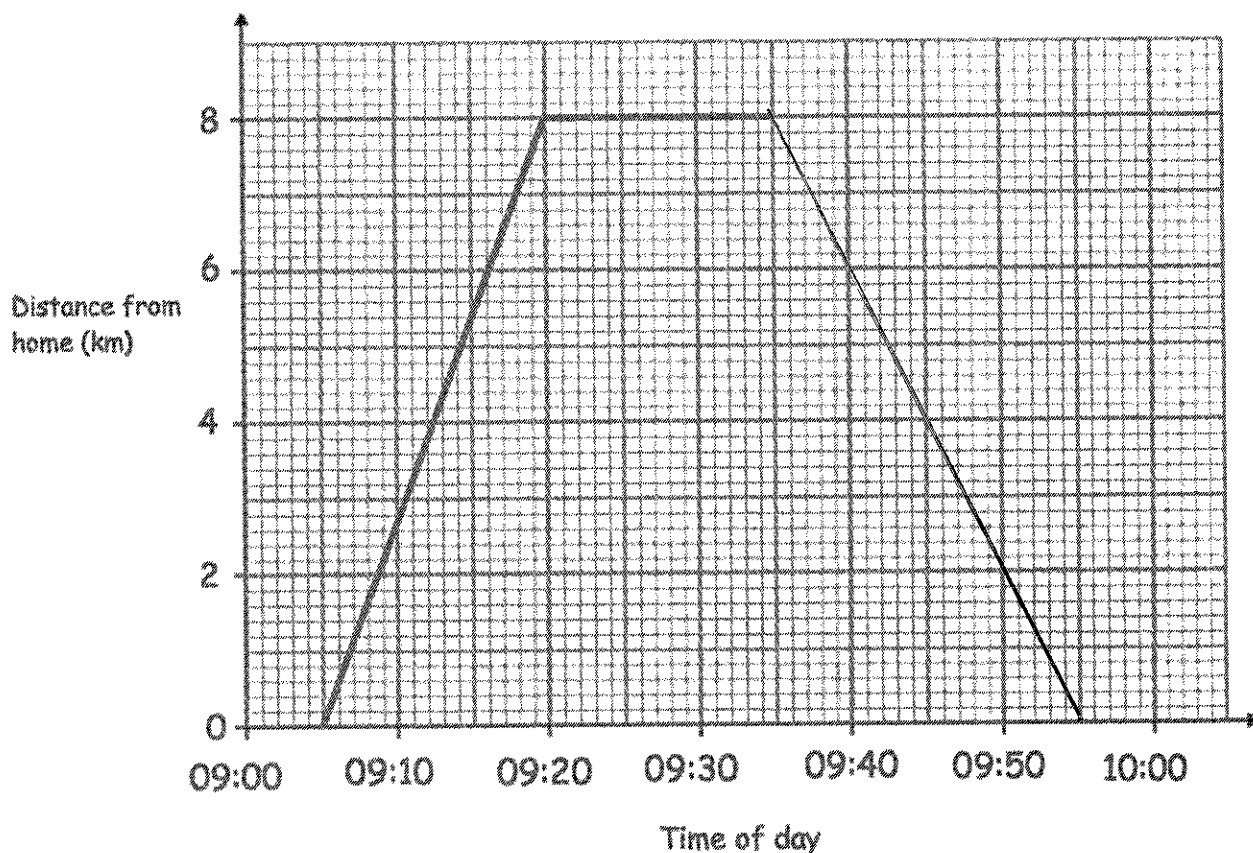   Here is the distance-time graph for the journey.

(a) How far was Edward from home when he visited Nicola?

40 ....miles

(1)

(b) How long did Edward stop for?

I hour 30 minutes
....

(1)

2. Ellie cycled from her home to her friend's house.
   She stayed at her friend's house and then travelled home.

(a) At what time did Ellie leave home?

09:05

(1)

(b) How far was Ellie from home while visiting her friend?

8 km

(1)

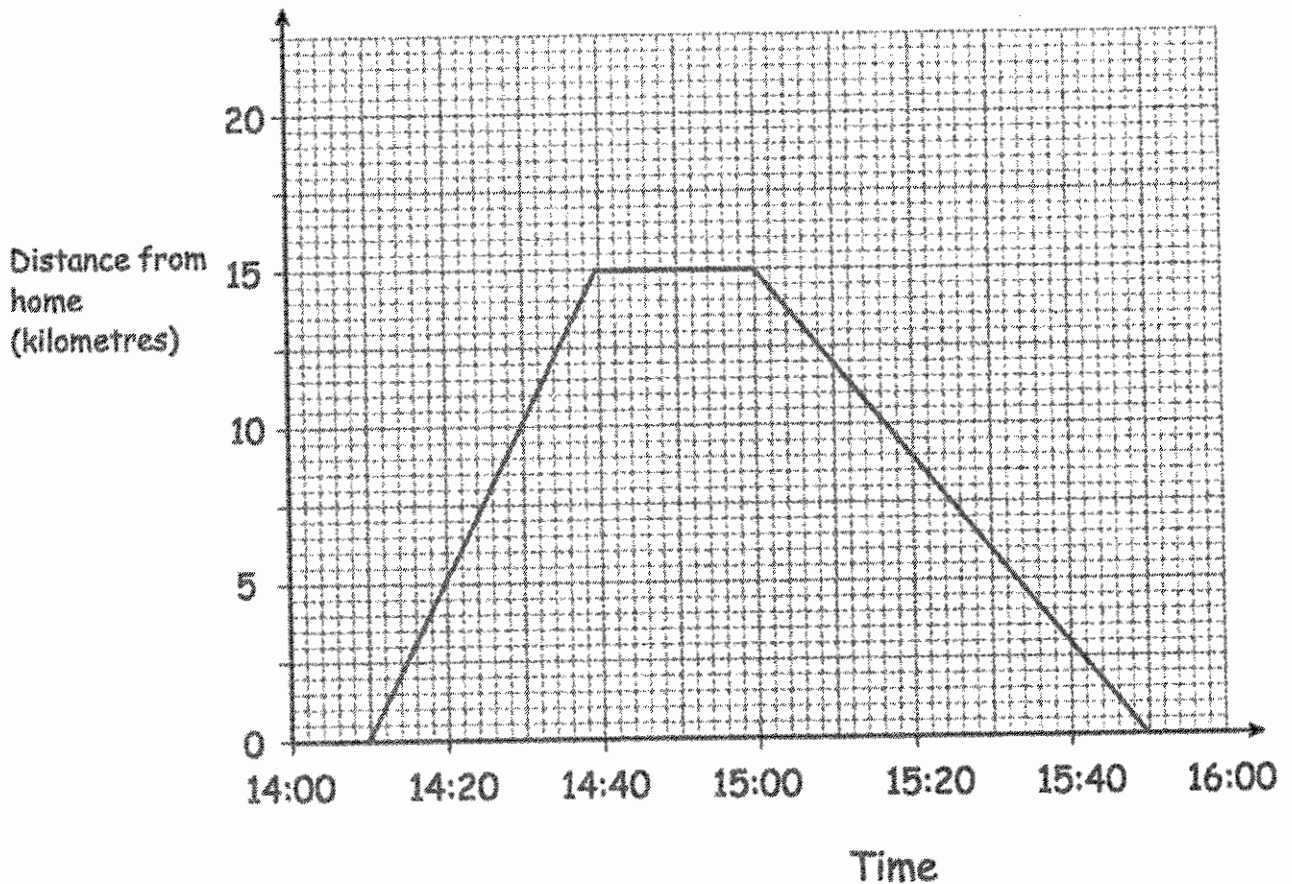(c) How long did Ellie stay at her friend's house?

15 minutes

(1)

Ellie arrived home at 09:55.

(d) Complete the distance-time graph.

(1)

3.   Joseph travelled from his home to his friend's house 15 km away.
Joseph stayed for some time and then returns home.

Here is the distance-time graph

(a) At what time did Joseph leave home?

14:10
....
(1)

(b) How far was Joseph from home at 14:30?

10
.........................km
(1)

(c) How long did Joseph spend at his friend's house?

20
.........................minutes
(1)

(d) How far did Joseph travel in total?

30
.........................km
(1)

4. Anne cycles from Bristol to Salisbury.
The diagram shows the distance-time graph of her journey.
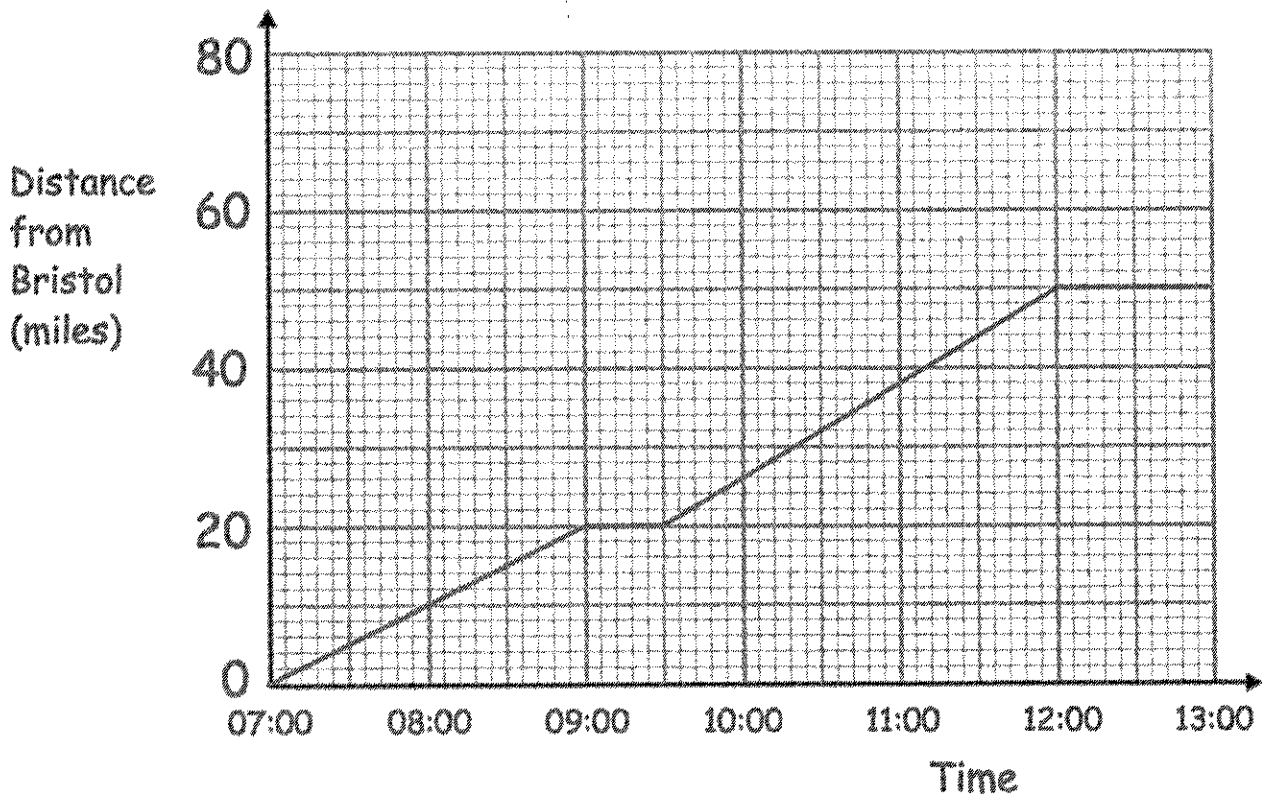
(a) How far from Bristol is Anne at 08:00?

.........10..............miles

(1)

(b) Describe what is happening between 09:00 and 09:30
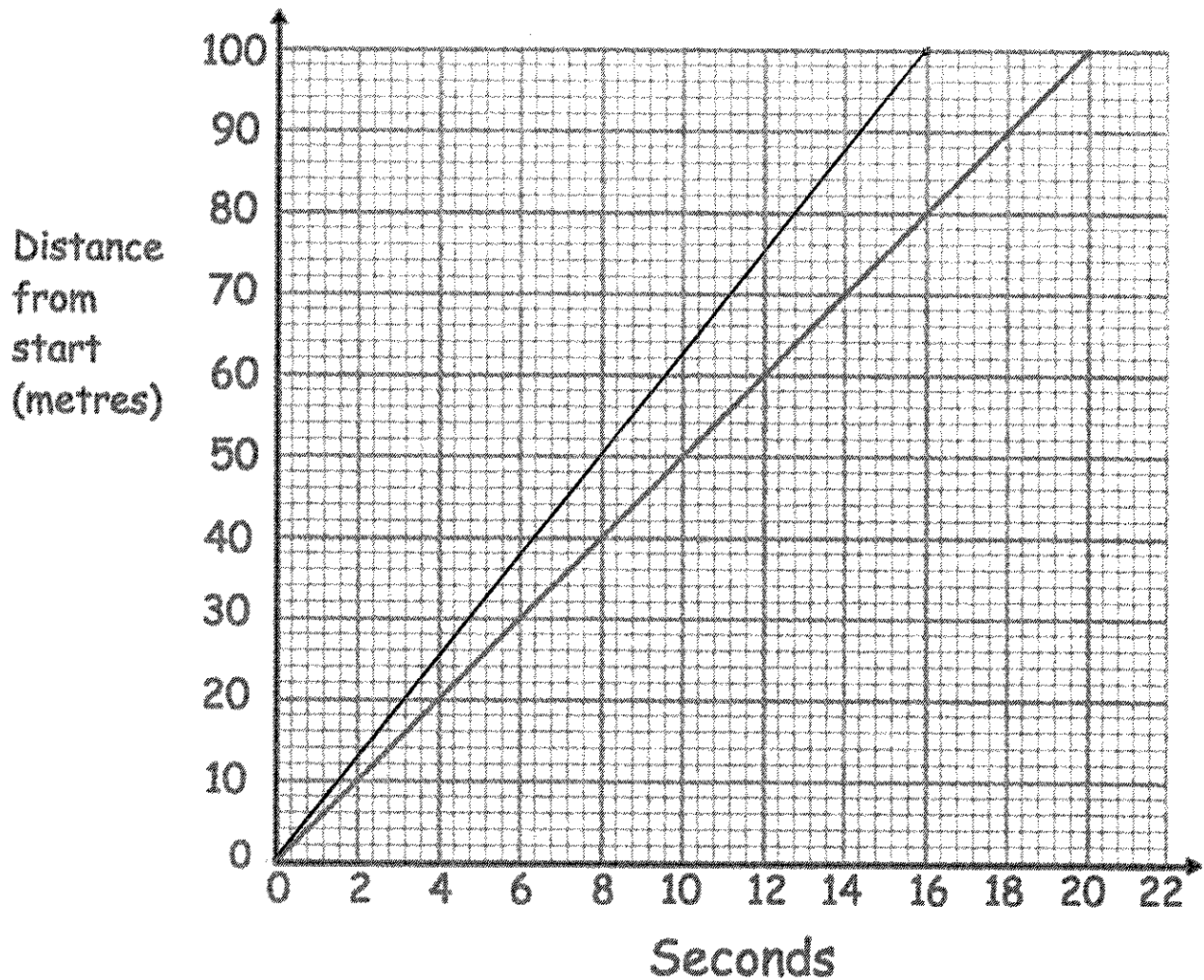
....Anne...is...stationary / resting / has stopped..........

(1)

(c) Work out Anne's speed for the first two hours of her journey

$$S = \frac{d}{t} = \frac{20}{2}$$

..........10...............miles per hour

(2)

5.   Henry takes place in a 100 metre race.
      The diagram shows the distance-time graph of his race.

(a) How long did it take Henry to run 100 metres?

.........20..........seconds

(1)

(b) What is Henry's average speed over the race

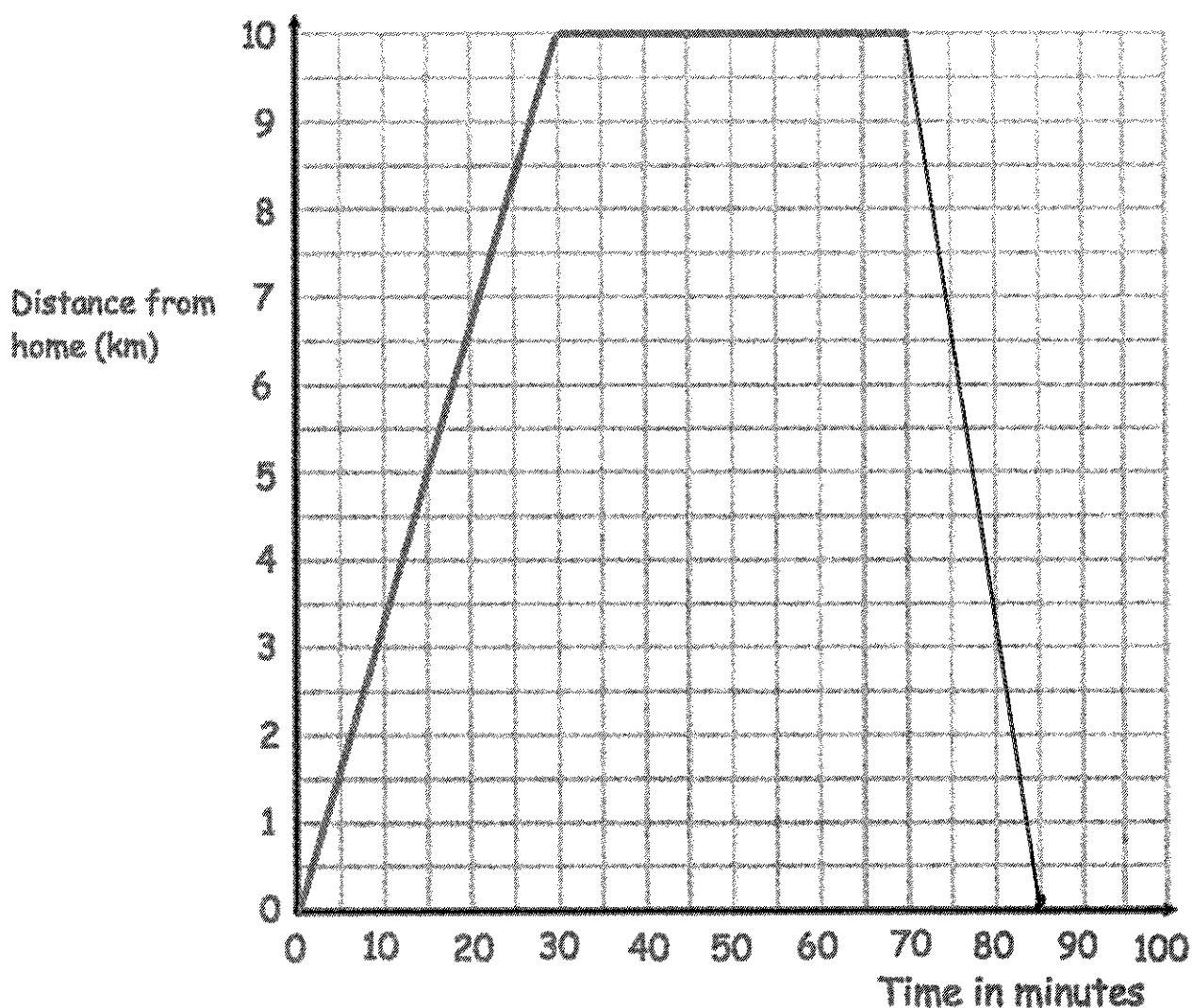$$s = \frac{d}{t} = \frac{100}{20}$$

.........5..........metres per second

(2)

Helen completes the race in 16 seconds.

(c) Show this on the distance-time graph.

(1)

6. Here is part of a travel graph of Andrew's journey from his home to the gym and back.

(a) Work out Andrew's speed for the first 30 minutes of his journey.

$S = \frac{d}{t} = \frac{10}{0.5} = 20$

.........20......... km/h

(2)

Andrew spends 40 minutes at the gym.
He then travels back to his home at 40 km/h.
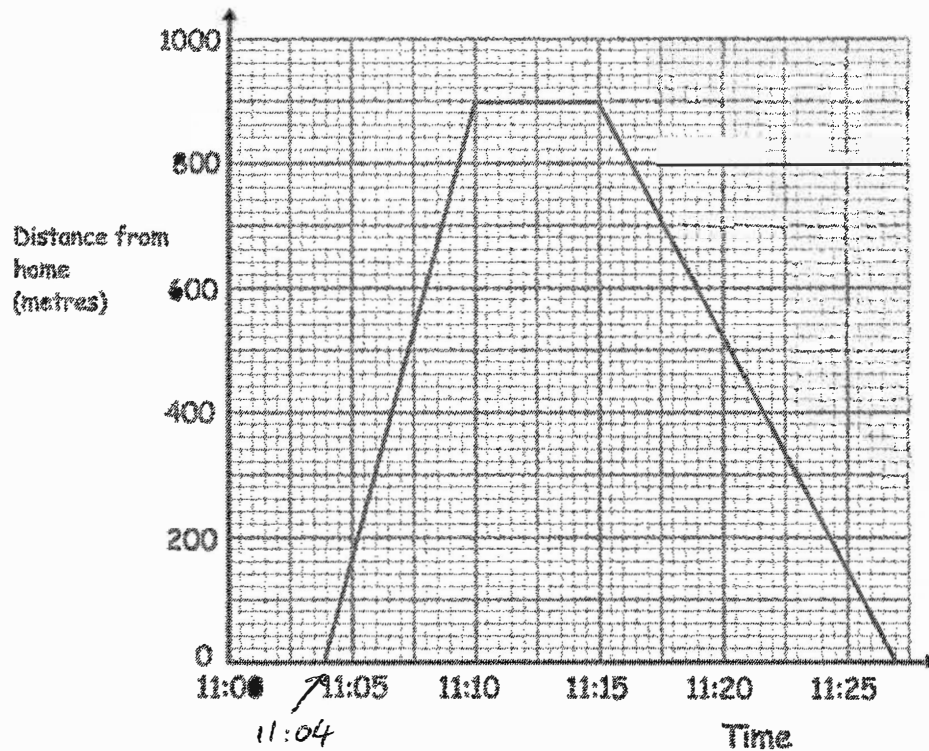
(b) Complete the travel graph.

$t = \frac{d}{S} = \frac{10}{40} = 0.25$

↑

15 minutes

(2)

7. Rebecca rollerbladed from her home to the playground.
    Rebecca stayed in the playground for some time.
    She then rollerbladed home.

    Here is a distance-time graph of Rebecca's journey.

(a) How long did it Rebecca take to rollerblade from her home to the playground?
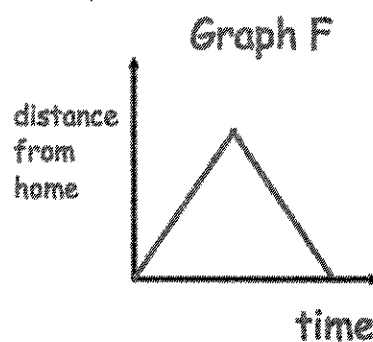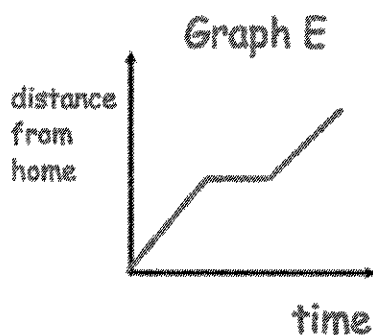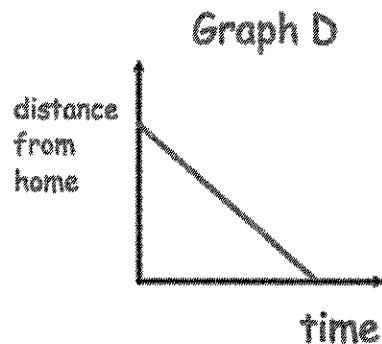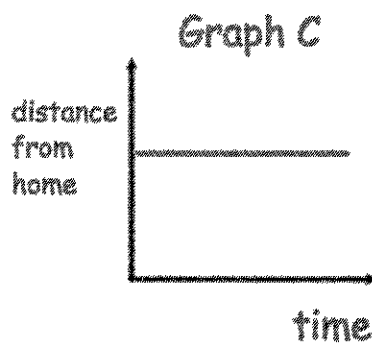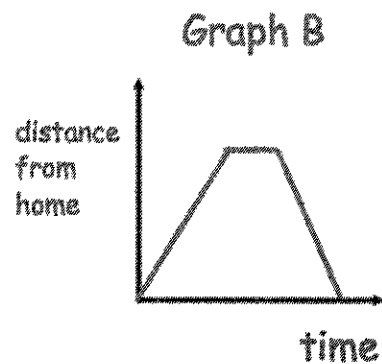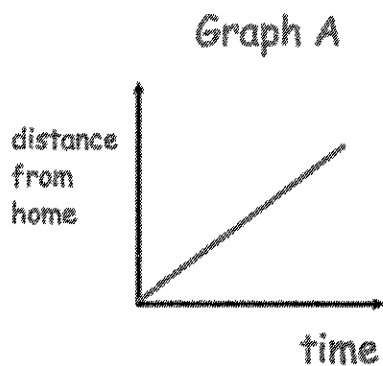
_____6_____minutes

(1)

(b) How long did Rebecca spend at the playground?

_____5_____minutes

(1)

(c) Was Rebecca's speed travelling home, faster or slower than travelling to the playground? Explain your answer.

- Slower as the journey home took 12 minutes compared to 6 minutes.

- Or the line is less steep, therefore it is slower

(1)

8. Shown below are six distance-time graphs

Graph A

distance from home vs time — straight line increasing from origin

Graph B

distance from home vs time — trapezium shape

Graph C

distance from home vs time — horizontal line

Graph D

distance from home vs time — line decreasing to zero

Graph E

distance from home vs time — increasing, flat, then increasing

Graph F

distance from home vs time — triangle shape

Each sentence in the table describes one of the graphs.
Write the letter of the correct graph next to each sentence.

Mr.Jones travels to work and immediately returns	F
Mr.Jones leaves work and travels home at a steady speed	D
Mr.Jones leaves home and travels to work at a steady speed	A
Mr.Jones stays at work	C
Mr.Jones travels to work, stays there for some time and then returns home	B
Mr.Jones leaves home and travels to work, stopping at the shop on the way	E

(3)

9.   Here is a distance-time graph for a train journey

Distance (miles)

Time (minutes)
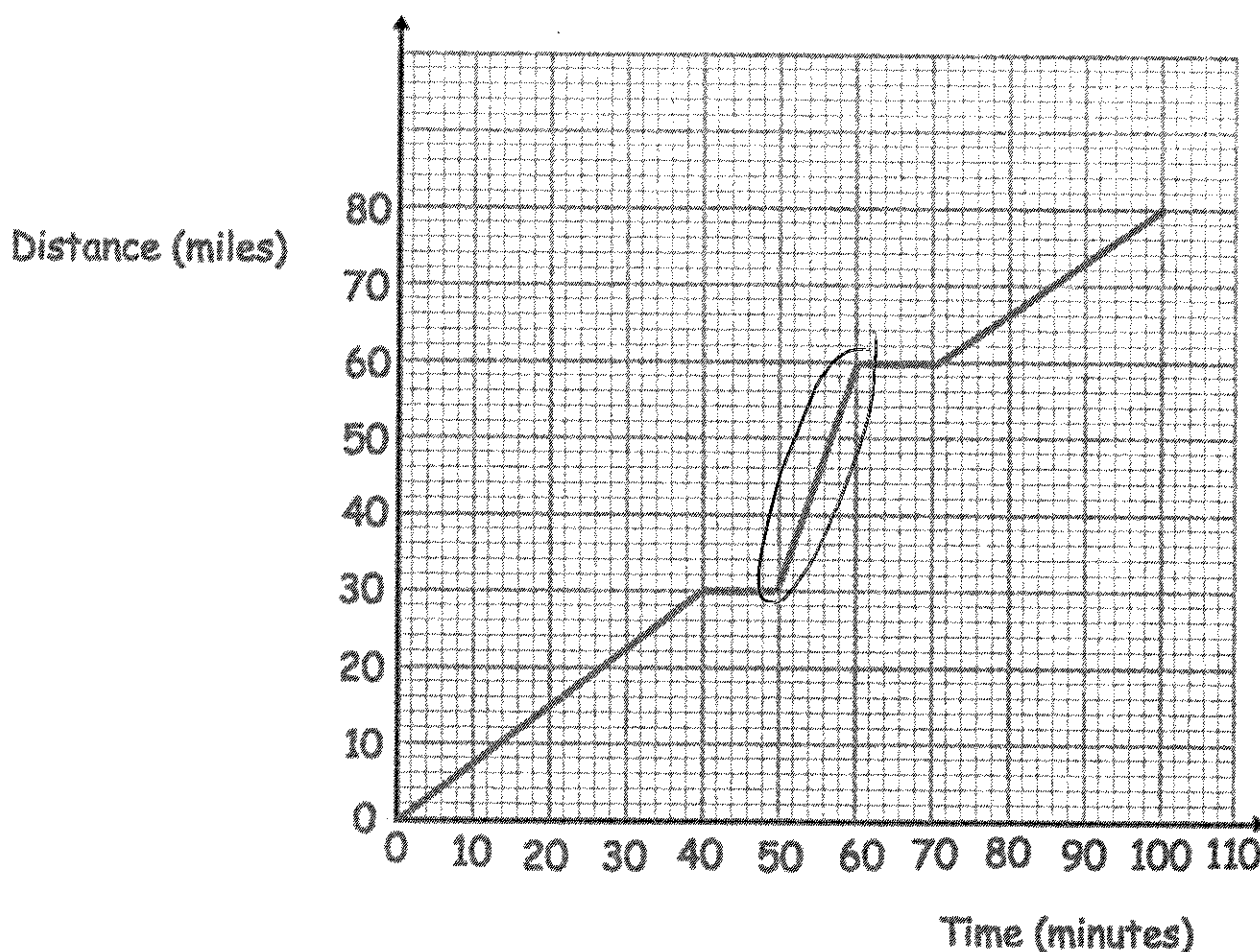
(a) Calculate the speed of the train on the last section of the journey, from 70 to 100 minutes.

$$s = \frac{d}{t} = \frac{20}{0.5}$$

...........40...........miles per hour

(2)

(b) Circle the part of the journey that the train travels fastest.

(1)

(c) Explain your answer

This section has the steepest line, therefore it is covering a longer distance in a shorter time.

(1)

10. Bethany drove to a family meal and then back home.
The meal was at a restaurant that is 70 kilometres from her home.

(i) Bethany left home at 10:00 and arrived at the restaurant at 11:30.
(ii) She stayed at the family meal for 2 hours.
(iii) Bethany then drove home at a speed of 35 kilometres per hour.
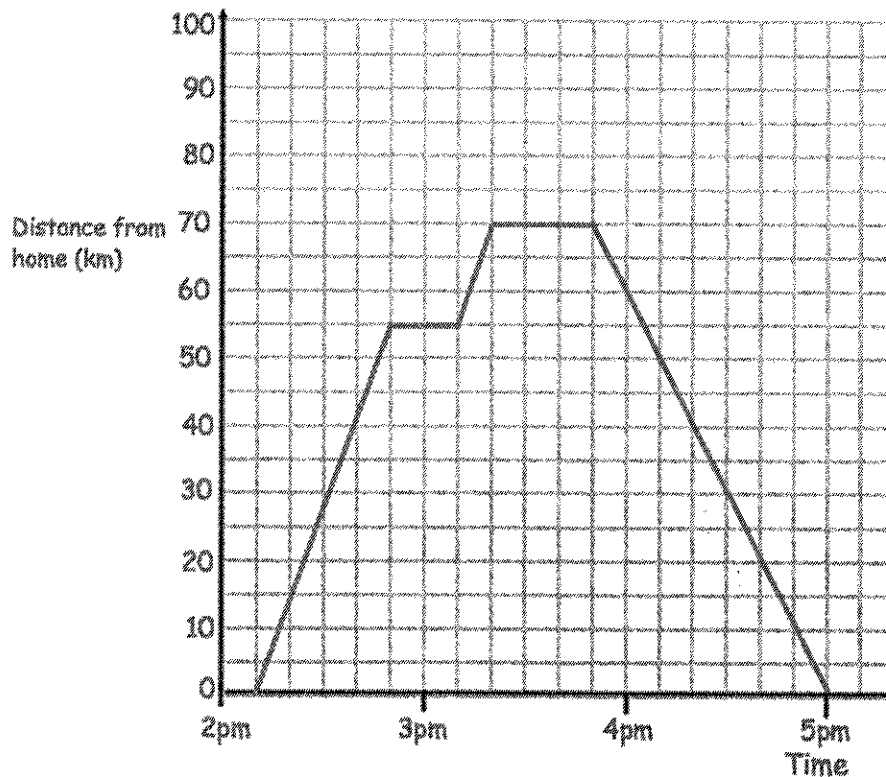
Show this information on the distance-time graph.

(3) $t = \dfrac{d}{s} = \dfrac{70}{35} = 2$

(3)

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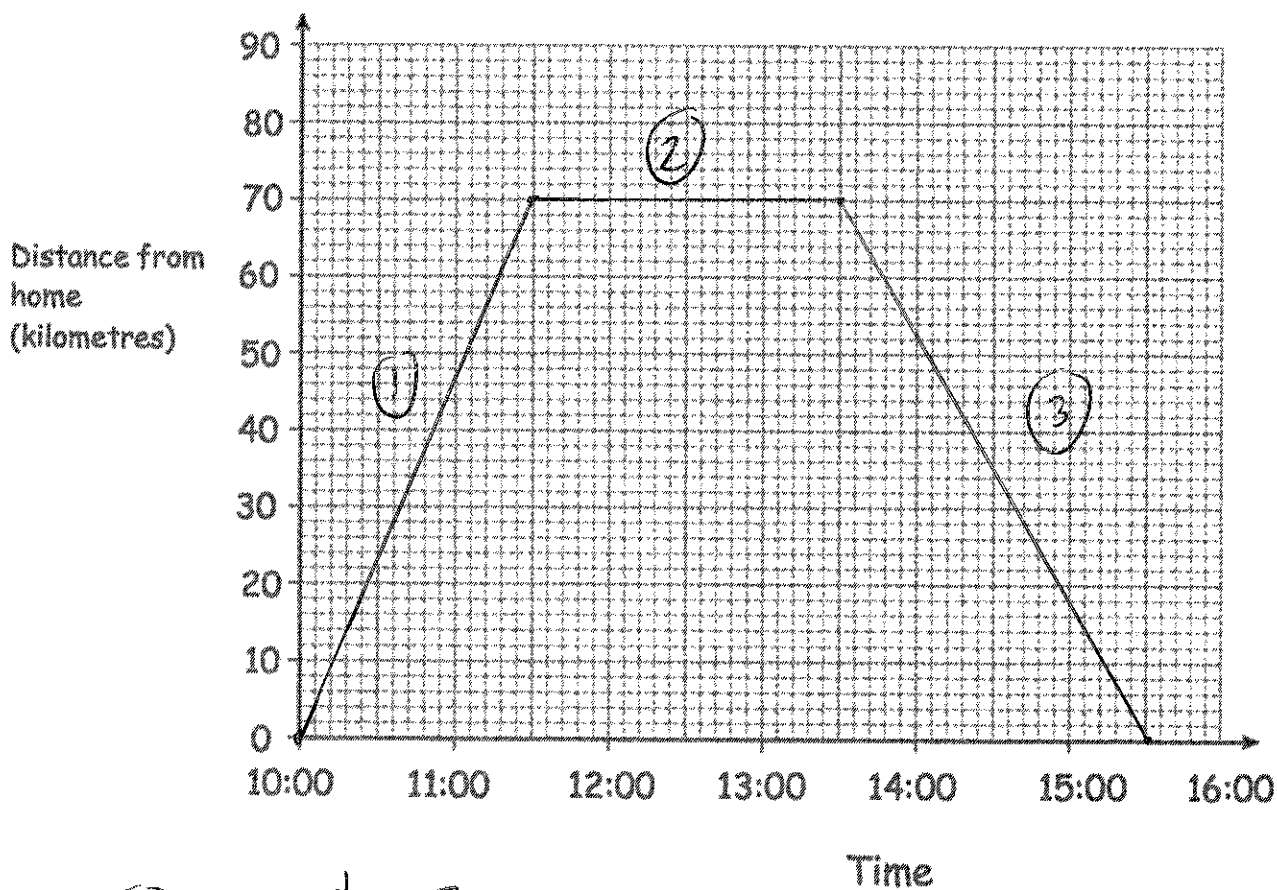
11. Roy visited his aunt and then returned home.
The distance-time graph shows information about Roy's journey.

(a) Write down the time that Roy started his journey

2:10 pm

(1)

At 2:50pm Roy stopped for a rest.

(b) How many minutes was this rest?

20 ....minutes

(1)

Roy stayed with his aunt for 30 minutes and then returned home.

(c) Work out Roy's average speed on the journey home.

$$s = \frac{d}{t} = \frac{70}{1.1666...}$$

1 hour 10 mins = 1.1666...

60 ....km/h

(2)

(c) Work out the total distance travelled by Roy

$$70 + 70 =$$
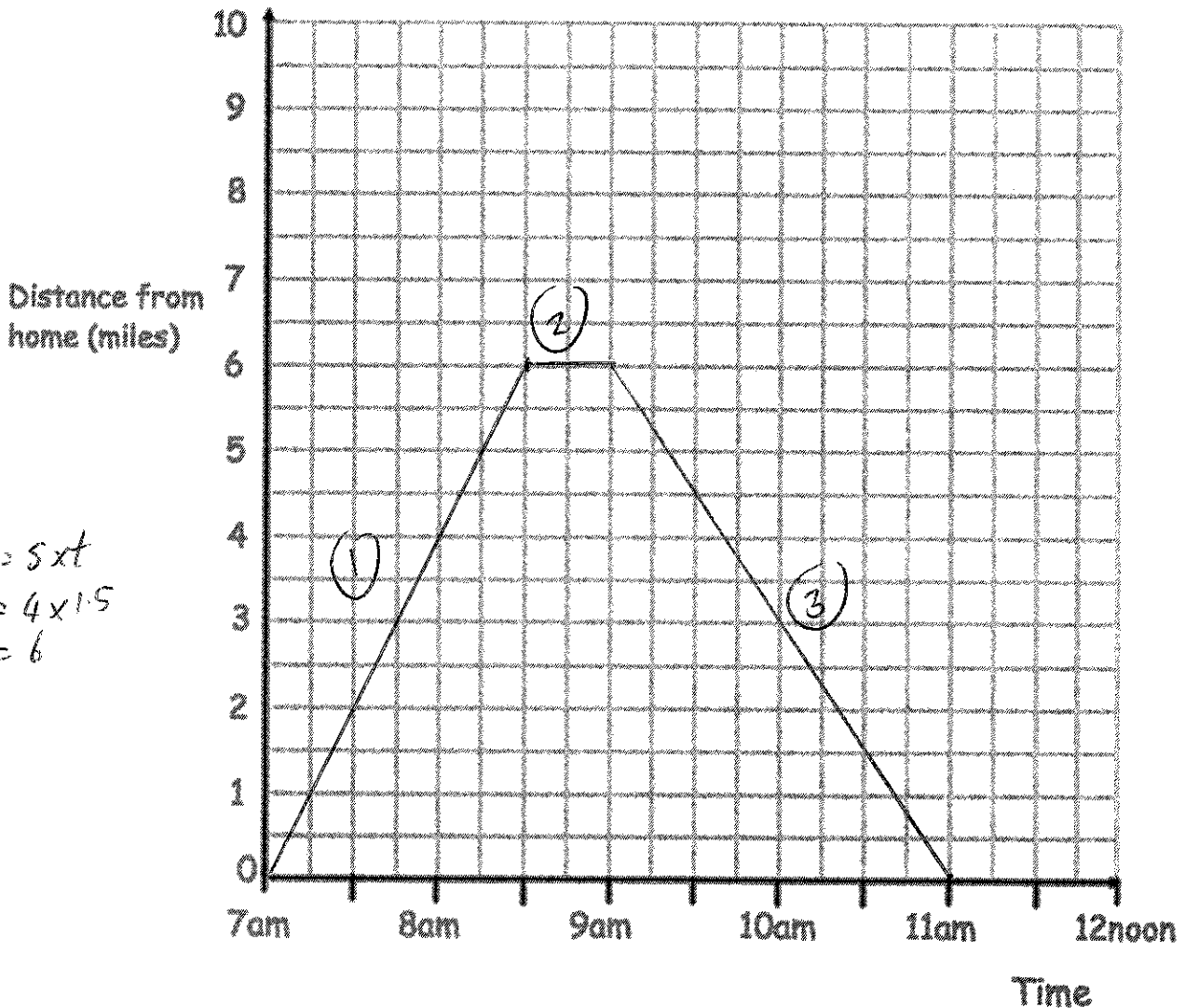
or

$$55 + 15 + 70 =$$

140 ....kilometres

(2)

12. Orla leaves home at 7am
    ① She walks at a speed of 4 miles per hour for 90 minutes.
    ② She stops for half an hour.
    ③ Orla then walks home and arrives at 11am.

(a) Draw a distance-time graph to show Orla's journey.

① $d = s \times t$
   $= 4 \times 1.5$
   $= 6$

(3)

(b) What is Orla's average speed on the return part of her walk?

$$S = \frac{d}{t} = \frac{6}{2}$$

3

..........................miles per hour

(2)

13. Teddy leaves home at 13:00
    ① He drives at an average speed of 60km/h for 2½ hours
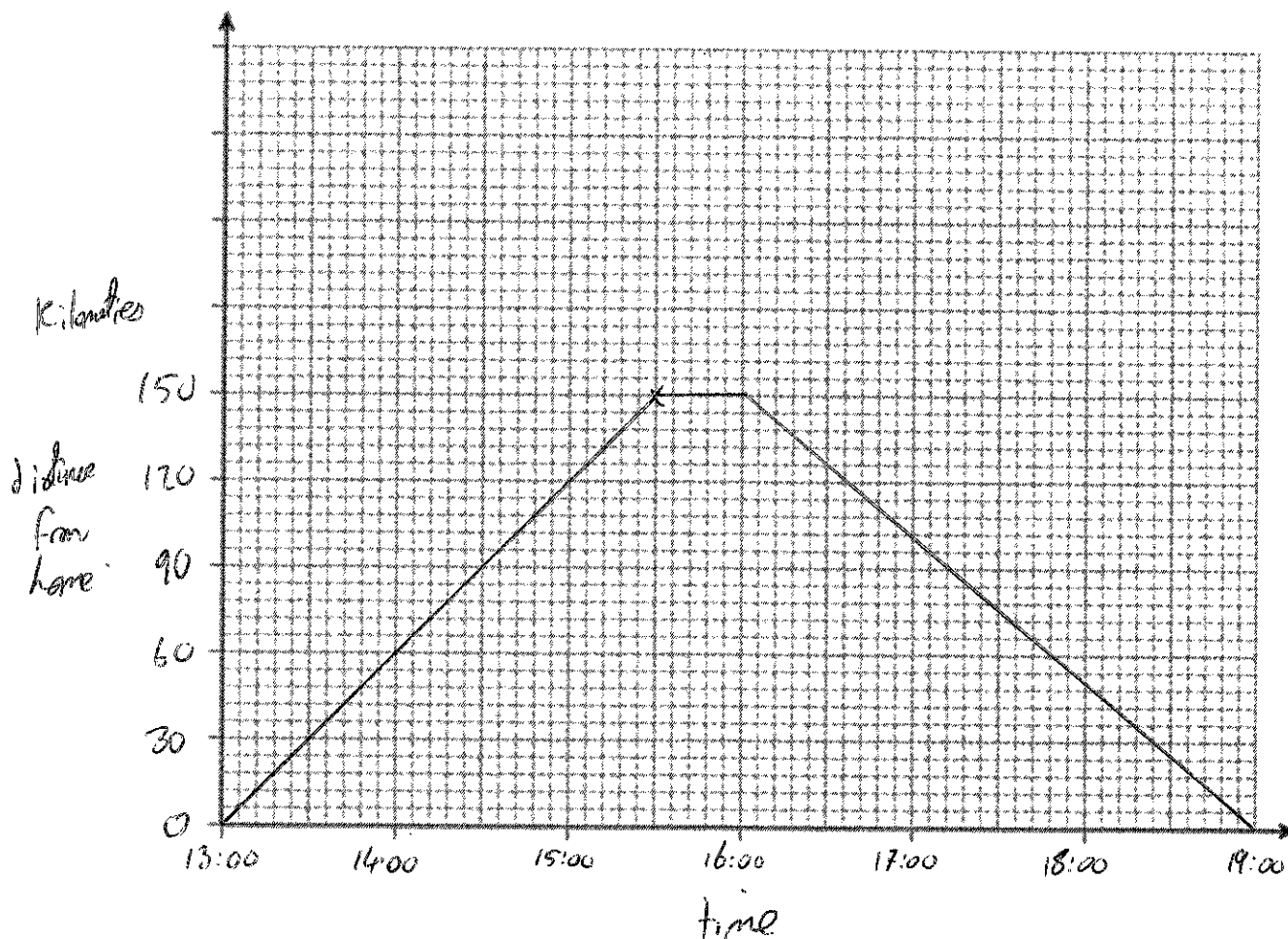   ② Teddy stops for 30 minutes.
    ③ He then drives home at an average speed of 50km/h

$d = s \times t$
$= 60 \times 2.5 = 150 \text{ km}$

$t = \dfrac{d}{s} = \dfrac{150}{50} = 3 \text{ hours}$

Kilometres

distance from home

150
120
90
60
30
O

13:00   14:00   15:00   16:00   17:00   18:00   19:00

time

(a) Show this information on a distance-time graph.

(4)
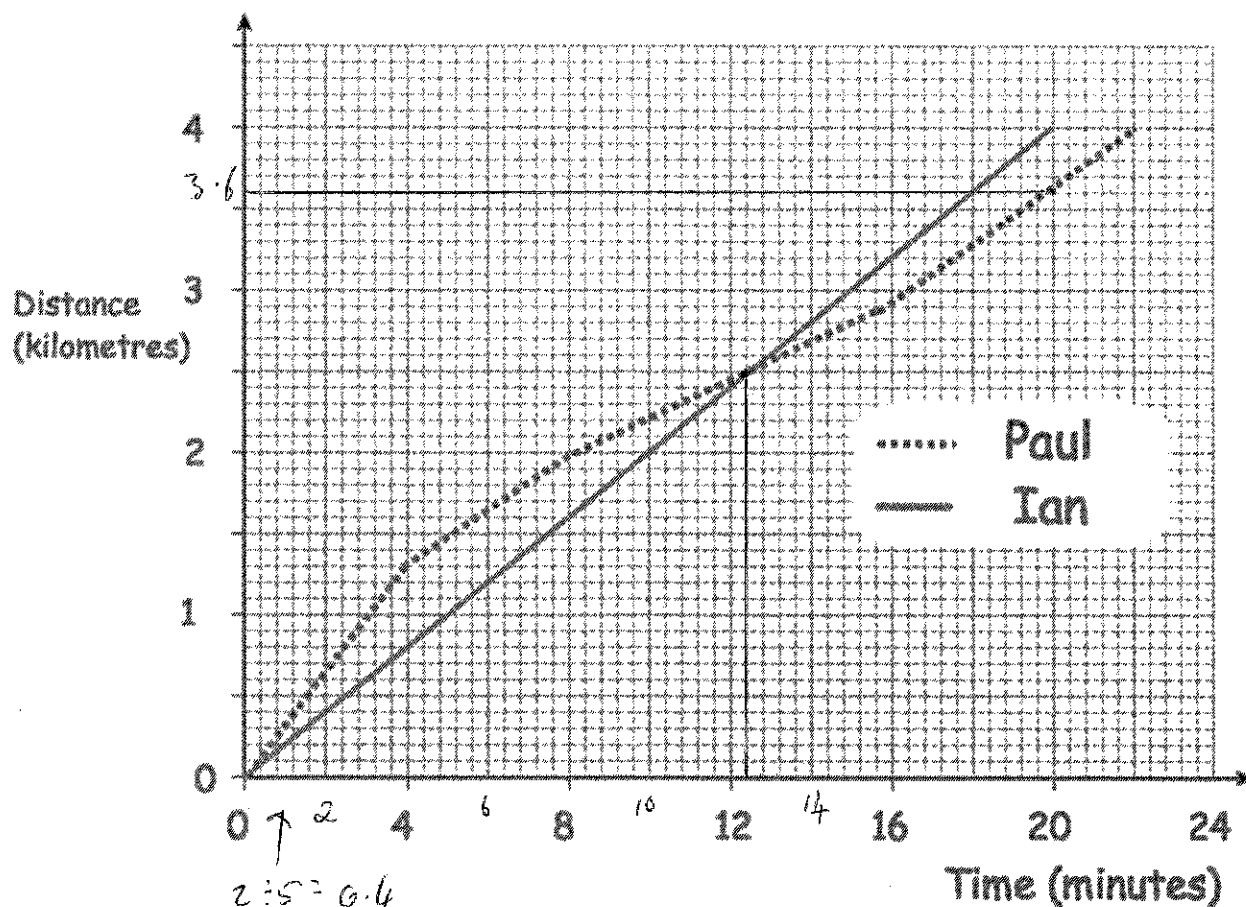
(b) A film starts at 18:45

Does Teddy get home in time for the start?
Explain your answer.

No, Teddy arrived home at 19:00

(1)

14. Ian and Paul took part in a 4 kilometre race.

Ian ran the race at a steady speed.

(a) What was Ian's average speed?

$$S = \frac{d}{t} = \frac{4}{0.3333...} = 12$$

.........12.........km/h

(2)

(b) At what time were both boys level?

.........12.4.........minutes

(1)

(c) Who won the race? By how much?

The winner was ....Ian......... by ....400.........m

(2)