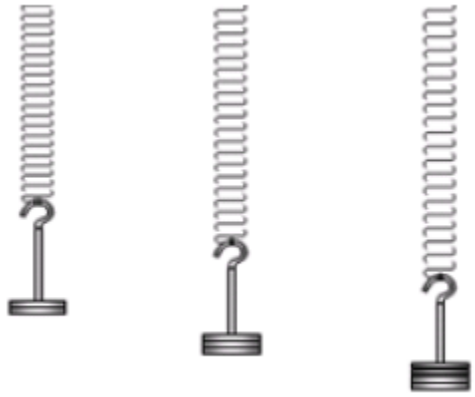
Q1.

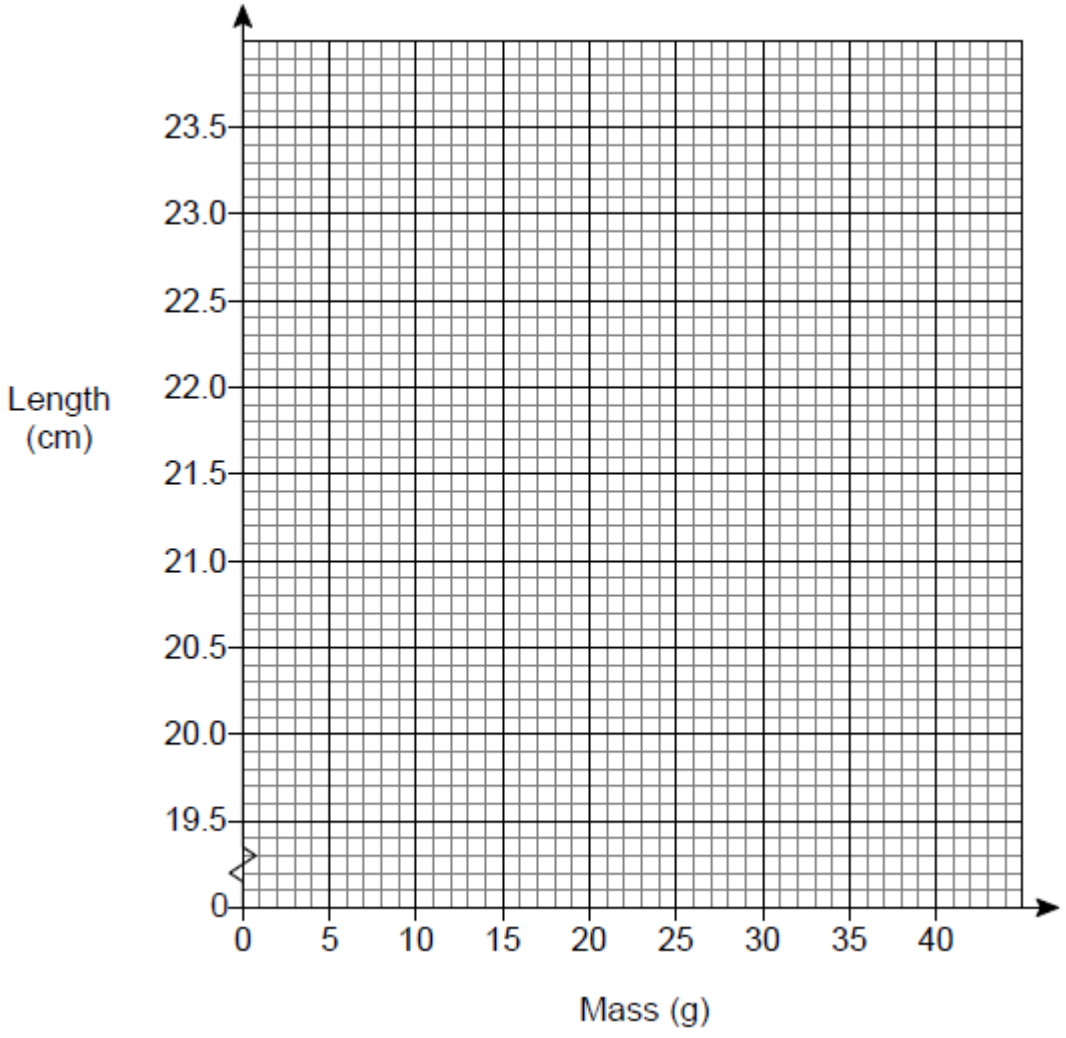
In an experiment, different masses are hung on a spring.



The length of the spring is measured for each mass.

Mass (g)	10	20	30	40
Length (cm)	20.8	21.6	22.4	23.2

(a) Draw a graph to show the length of the spring for masses from 10 g to 40 g



(2)

(b) Estimate the length of the spring with no mass hung on it.

Answer ..... cm

(1)

(c) How much longer is the spring with a 35 g mass than with a 15 g mass?

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Answer ..... cm

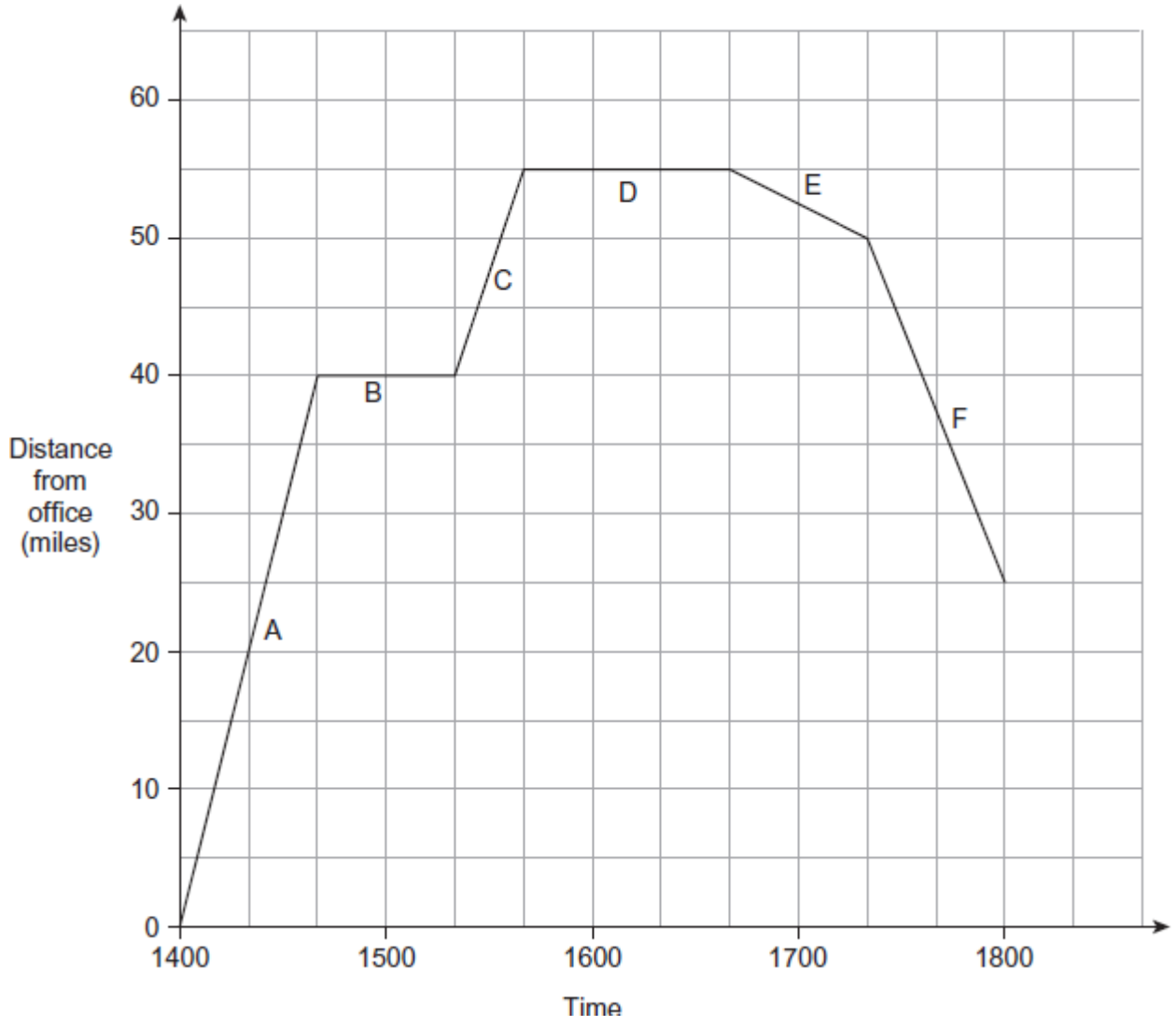
(2)

(Total 5 marks)

Q2.

Ruth left her office at 1400
She drove to two meetings and then drove home.

The distance-time graph shows her journeys.



(a) How many minutes was she stopped altogether?

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Answer ..... minutes

(1)

(b) How many miles did she drive altogether?

.....

.....

Answer ..... miles

(1)

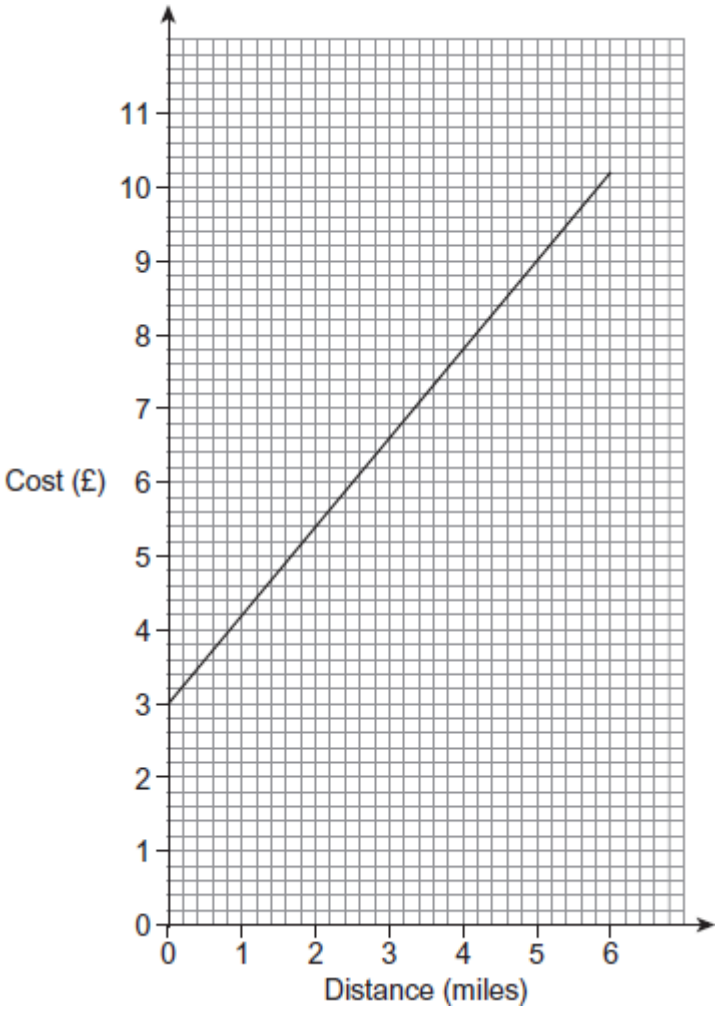
(c) On which part of the journey was her speed the fastest?
Circle your answer.

A C E F

(1)
(Total 3 marks)

Q3.

The graph shows the cost of taxi journeys of up to 6 miles.



(a) A taxi journey costs £9

How many miles was the journey?

Answer ..... miles

(1)

(b) How much does a taxi journey of 1 mile cost?

£ .....

(1)

(c) How much **more** does a taxi journey cost for each extra mile?

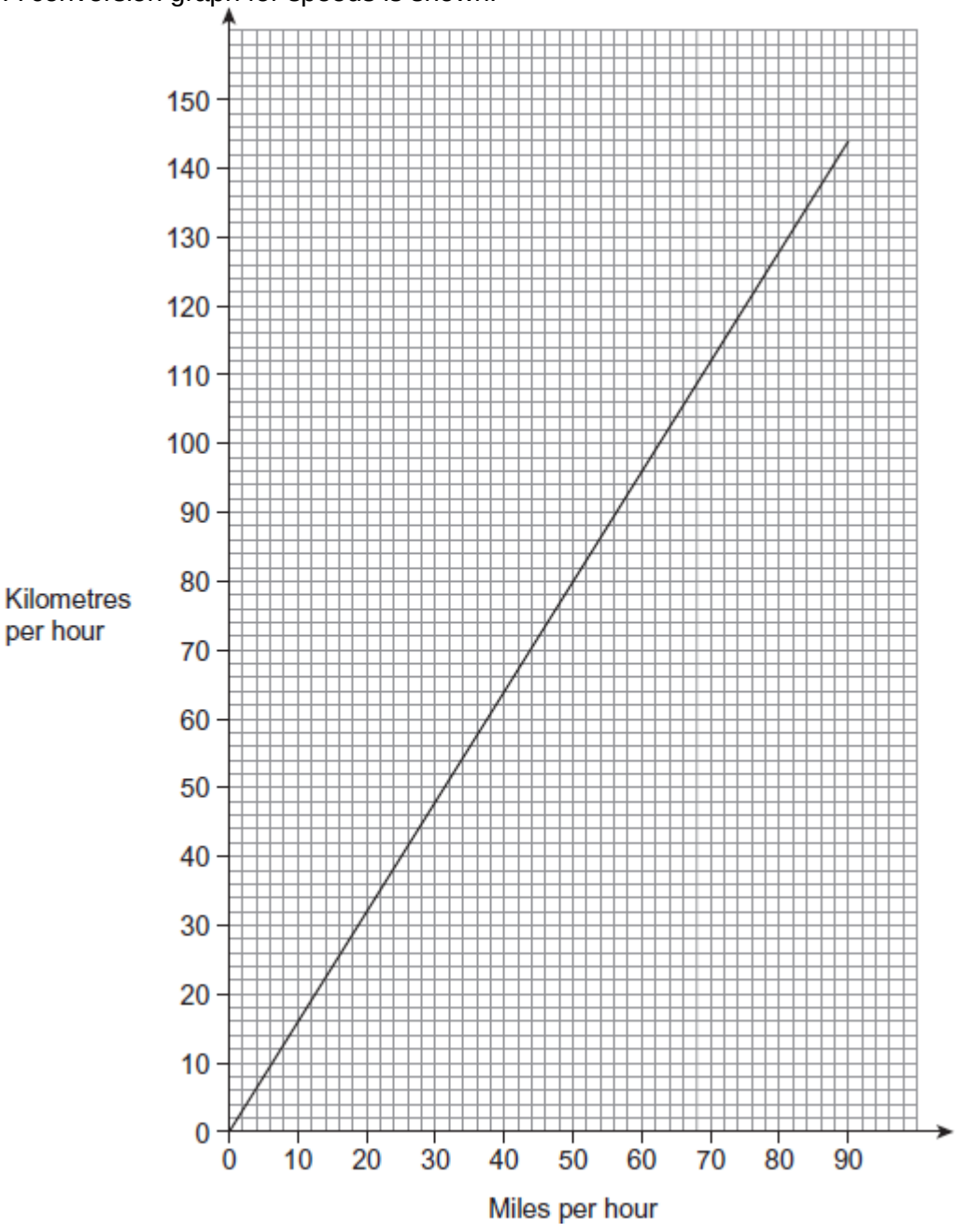
£ .....

(1)

(Total 3 marks)

Q4.

A conversion graph for speeds is shown.



(a) In France the motorway speed limit is 130 kilometres per hour.
In the UK the motorway speed limit is 70 miles per hour.

In which country is the motorway speed limit higher?
You **must** show your working, which may be on the graph.

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Answer .....

(1)

(b) Tom is on holiday in France.

He leaves Calais at 10.45 am
The distance from Calais to Paris is 288 kilometres.

He says,

"If I drive at an average speed of 60 **miles per hour** I will be in Paris before 2 pm"

Is he correct?
You **must** show your working.

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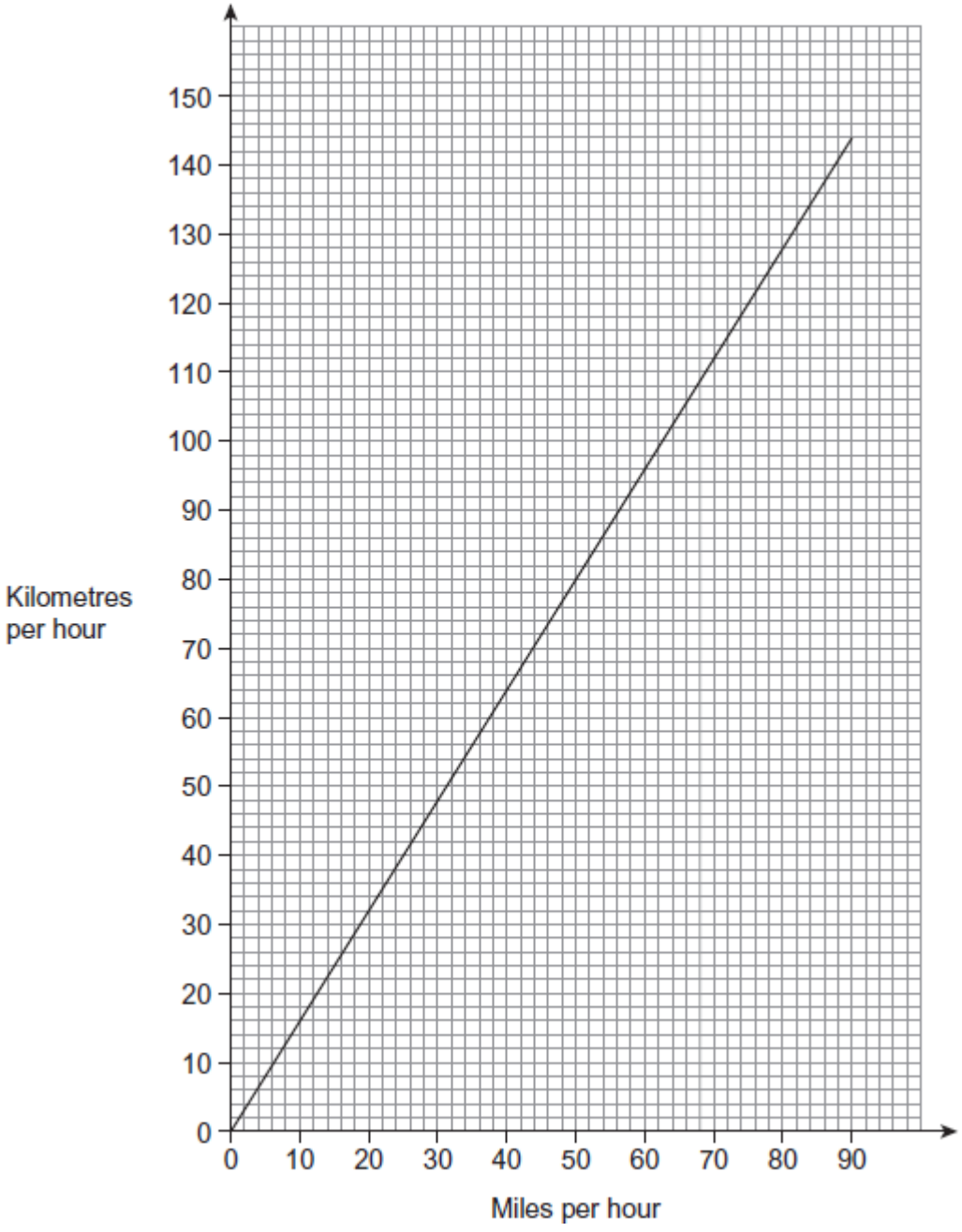
(4)
(Total 5 marks)

Q5.

A conversion graph for speeds is shown.



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Is he correct?
You **must** show your working.

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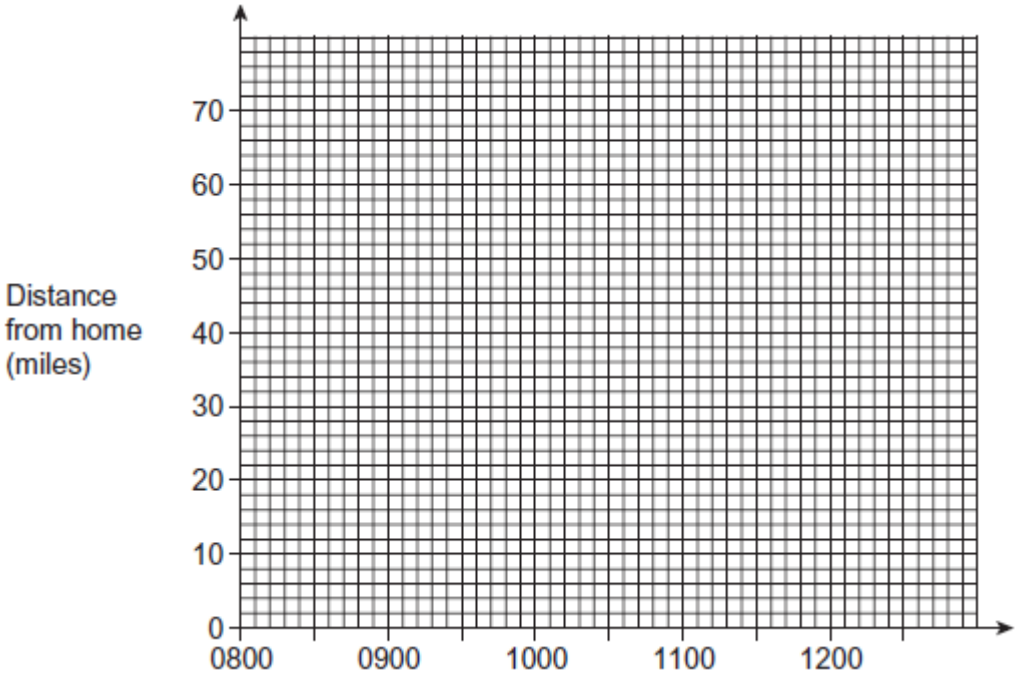
(Total 4 marks)

Q6. Dan leaves home at 0800.
He drives 60 miles from home in the first 90 minutes.
He stops for 30 minutes.
He then drives home at an average speed of 50 mph.



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

(3)

(b) A TV programme starts at 1130.

Does Dan get home in time for the start?
Show how you decide.

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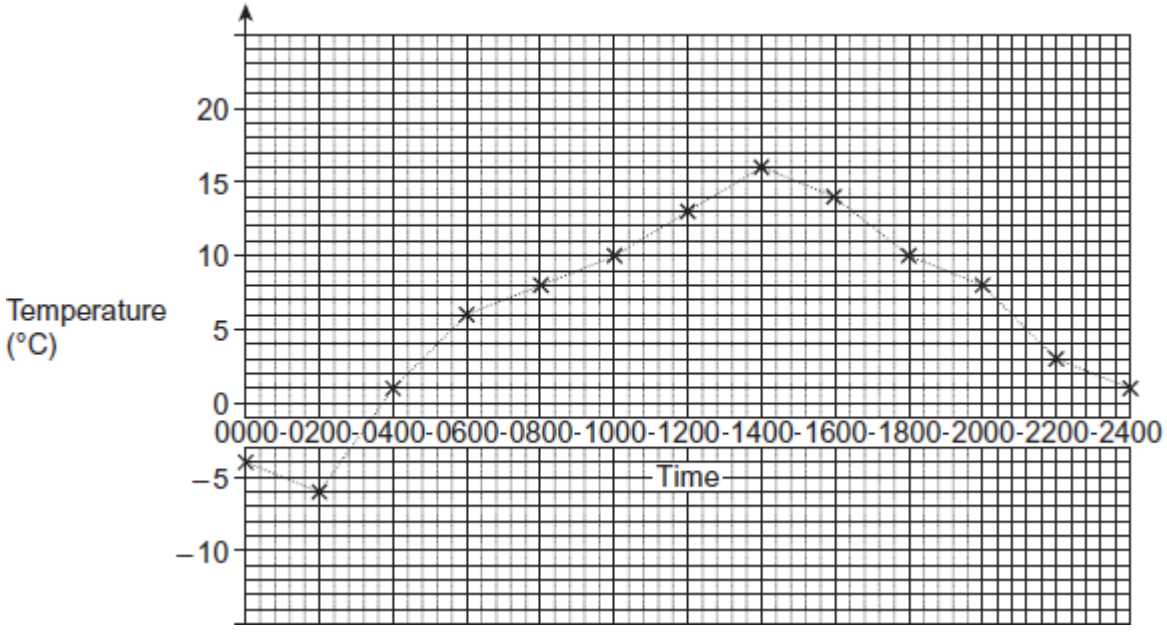
(1)
(Total 4 marks)

Q7.

The graph shows the temperature in a garden over 24 hours.



(a) Write down the temperature at 0200.

Answer ..... °C

(1)

(b) A heater in the greenhouse switches on when the temperature in the garden is below 10 °C.

For how many hours was the heater switched on?

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Answer ..... hours

(2)

(c) Work out the temperature range in the garden.

.....

Answer ..... °C

(2)

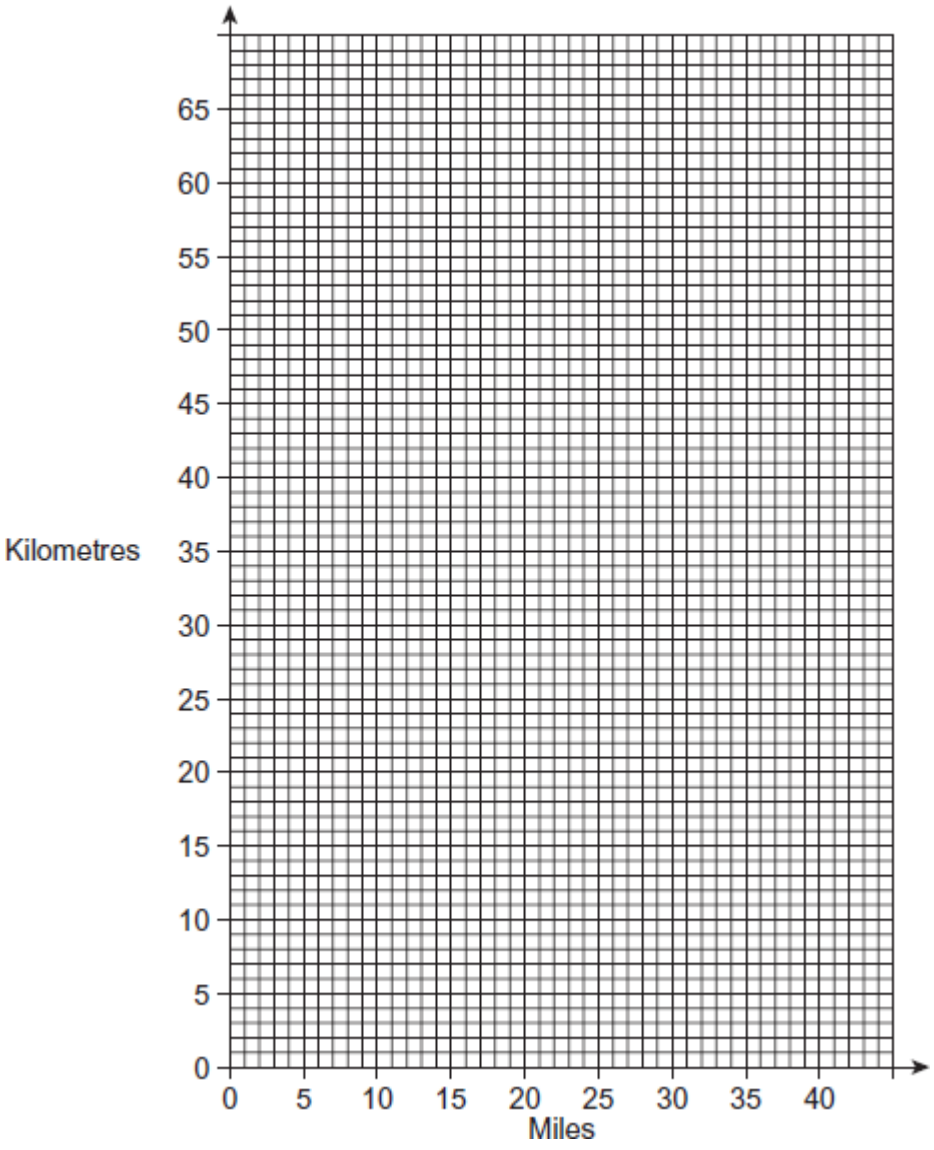
(Total 5 marks)

Q8.

(a)

Miles	0	20	40
Kilometres	0	32	64

Draw the conversion graph for miles and kilometres.



(2)

(b) Convert 35 miles to kilometres.

Answer ..... km

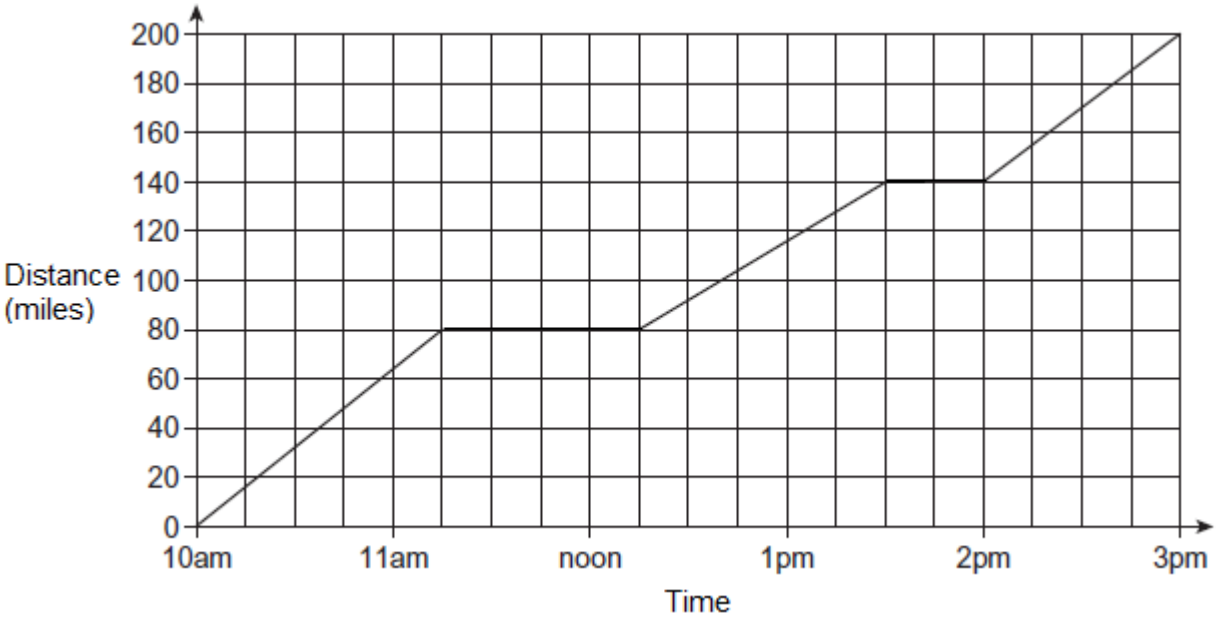
(1)

(c) Convert 24 kilometres to miles.

Answer ..... miles

(1)
(Total 4 marks)

Q9. The distance-time graph represents a journey Alf makes.



Alf claims that he stopped for less than one-quarter of his total journey time.

Is he correct?
You **must** show your working.

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(Total 3 marks)

Q10.

Alan is on holiday in France.

(a) He sees this sign.

Paris	120 kilometres

How many miles is this?
Use 8 kilometres = 5 miles

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Answer ..... miles

(2)

(b) He puts 48 litres of petrol in his car.

How many gallons is this?
Use 1 litre = 0.22 gallons

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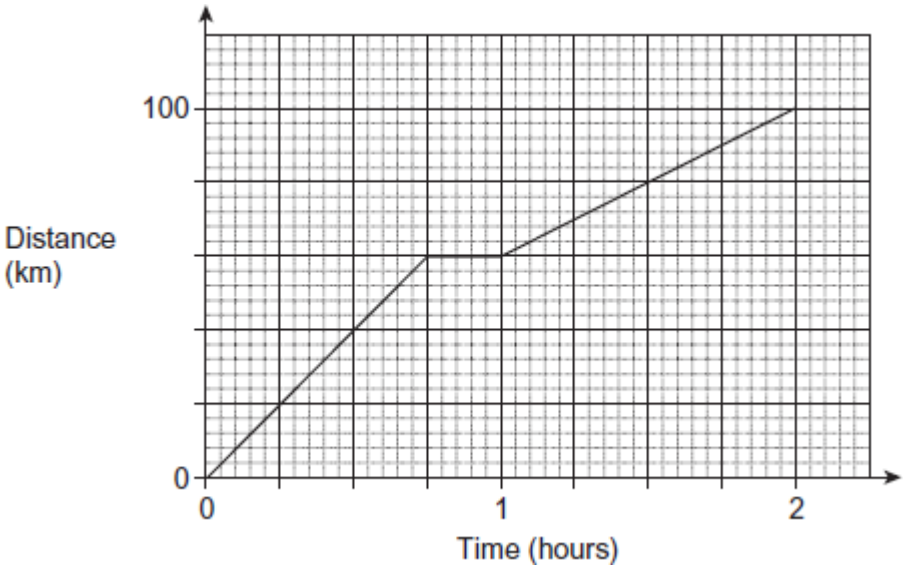
Answer ..... gallons

(2)

(c) This graph shows a journey he made to the coast.



During the journey he stopped at a café.

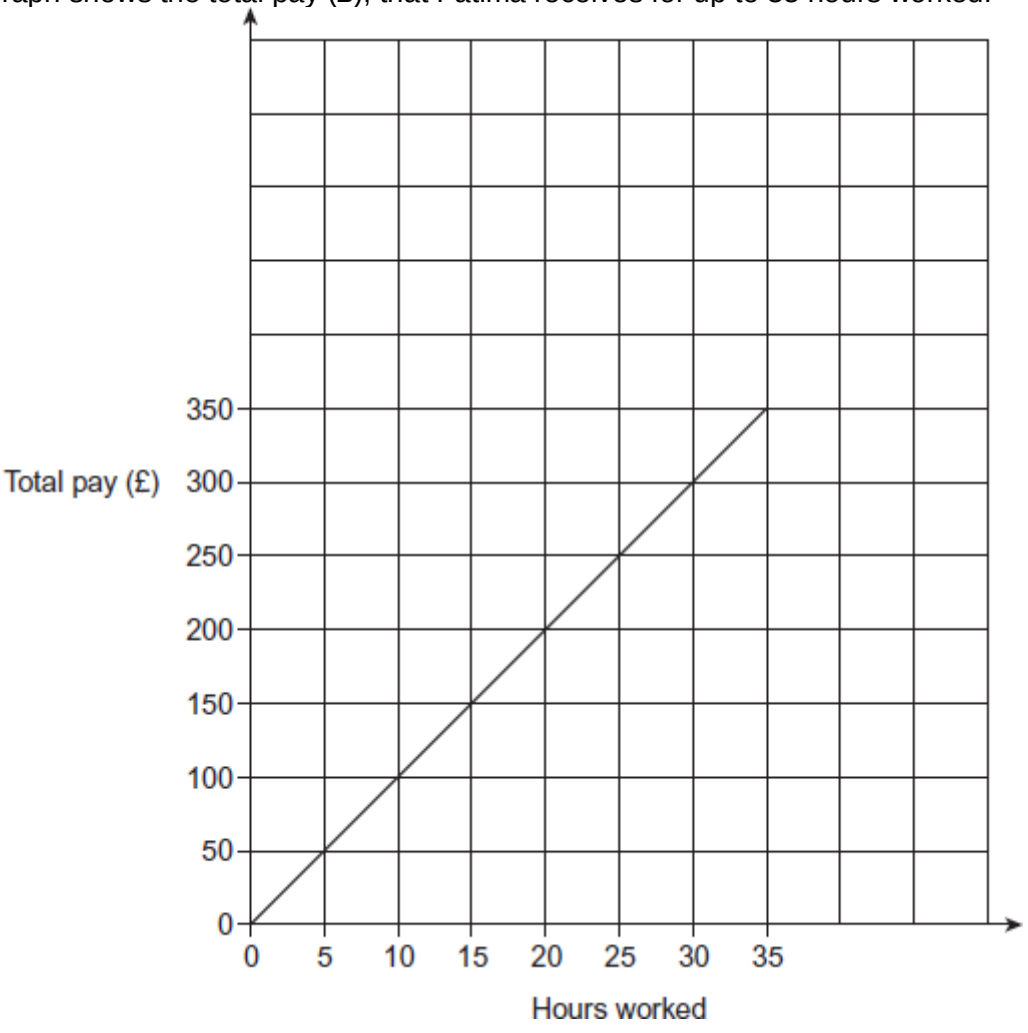
For how long did he stop?
State the units of your answer.

Answer .....

(2)
(Total 6 marks)

Q11.

The graph shows the total pay (£), that Fatima receives for up to 35 hours worked.



(a) How much is her total pay if she works for 35 hours?

£ .....

(1)

(b) How much is she paid per hour?

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£ .....

(1)

(c) She is paid £ 20 per hour for each hour she works above 35 hours.

Continue the graph for up to 45 hours worked.
You **must** complete the scales on the axes.

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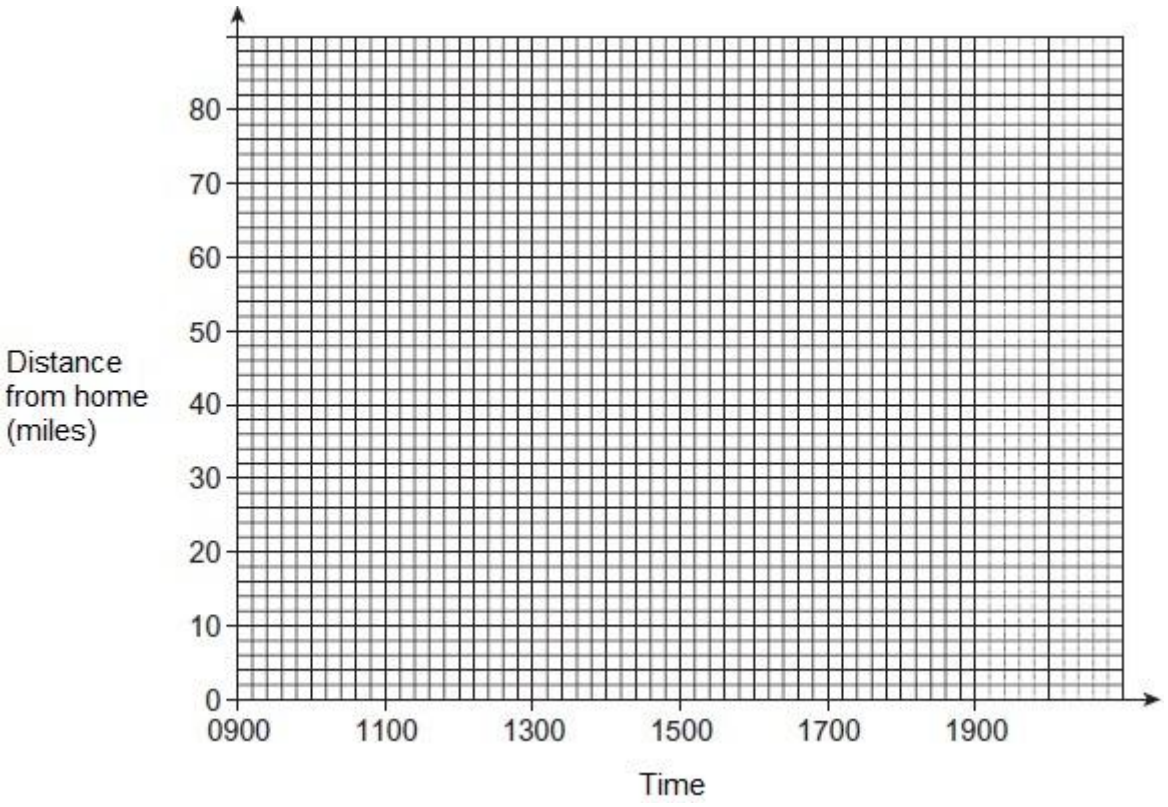
(4)
(Total 6 marks)

Q12. Josh drove to a meeting and then back home.
The meeting was 80 miles from his home.

- Josh left home at 9 am
- He arrived at the meeting after 2 hours
- He left for home $4\frac{1}{2}$ hours later
- He drove 30 miles in half an hour
- He then stopped for 1 hour
- He arrived home $1\frac{1}{2}$ hours later.

Show this information on the distance-time graph below.



(Total 4 marks)