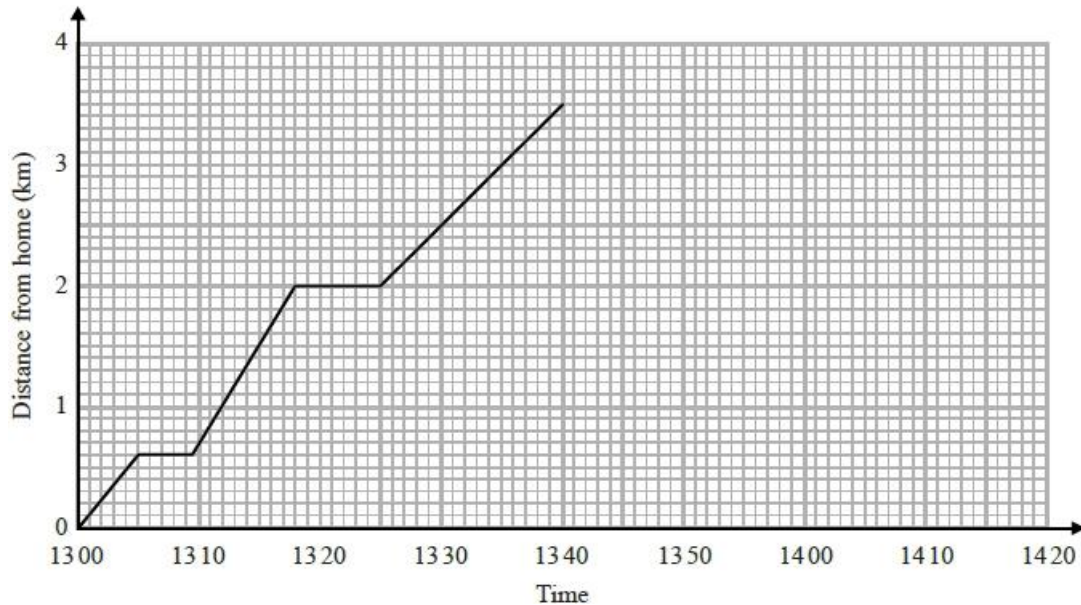


A084 Real-life graphs

Q1.

Arshad delivers parcels on his bike.
He starts from his home.

Here is the travel graph for the first 40 minutes of Arshad's journey.



(a) What time did Arshad start his journey?

.....
(1)

Arshad had to stop to deliver each parcel.

(b) How long, in minutes, did his first stop take?

..... minutes
(1)

(c) What is the distance between the two stops shown on the travel graph?

..... km
(2)

At 13 40, Arshad stopped for 10 minutes to deliver his last parcel.

He then cycled home at a steady speed.

Arshad got home at 14 15

(d) Complete the travel graph to show this information.

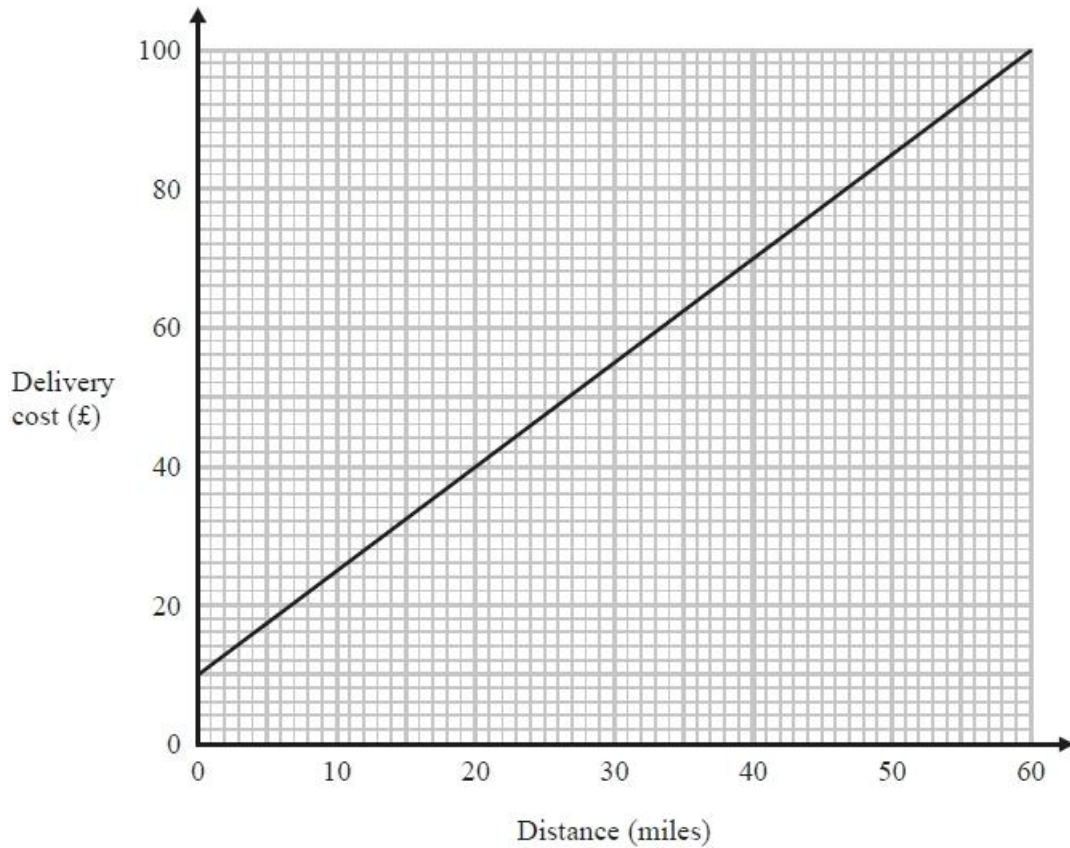
(2)

(Total for question = 6 marks)

Q2.

Tom uses his lorry to deliver bricks.

You can use this graph to find the delivery cost for different distances.



For each delivery, there is a fixed charge plus a charge for the distance.

(a) How much is the fixed charge?

£

(1)

Tom makes two deliveries of bricks.

The distance of one delivery is 20 miles more than the distance of the other delivery.

(b) Work out the difference between the two delivery costs.

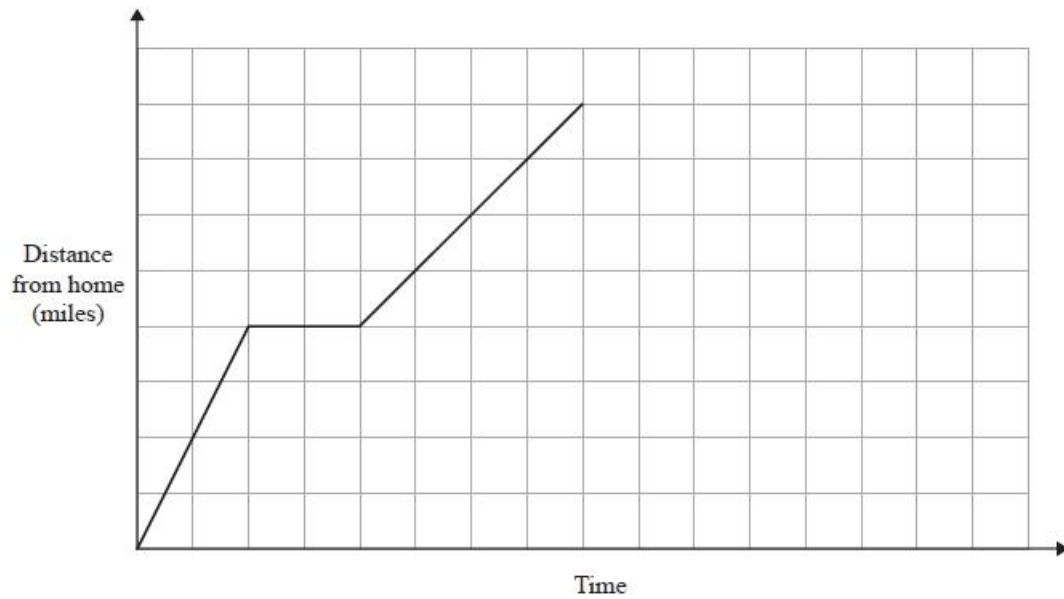
£

(2)

(Total for question = 3 marks)

Q3.

On Monday Ria delivered a parcel to a hospital.
The travel graph represents Ria's journey to the hospital.



Ria left home at 13 00
She drove for 30 minutes at a constant speed of 40 mph.
She then stopped for a break.
Ria then drove to the hospital at a constant speed.
She was at the hospital for 30 minutes.
She then drove home at a constant speed of 32 mph.
Show that she does not arrive home before 16 30

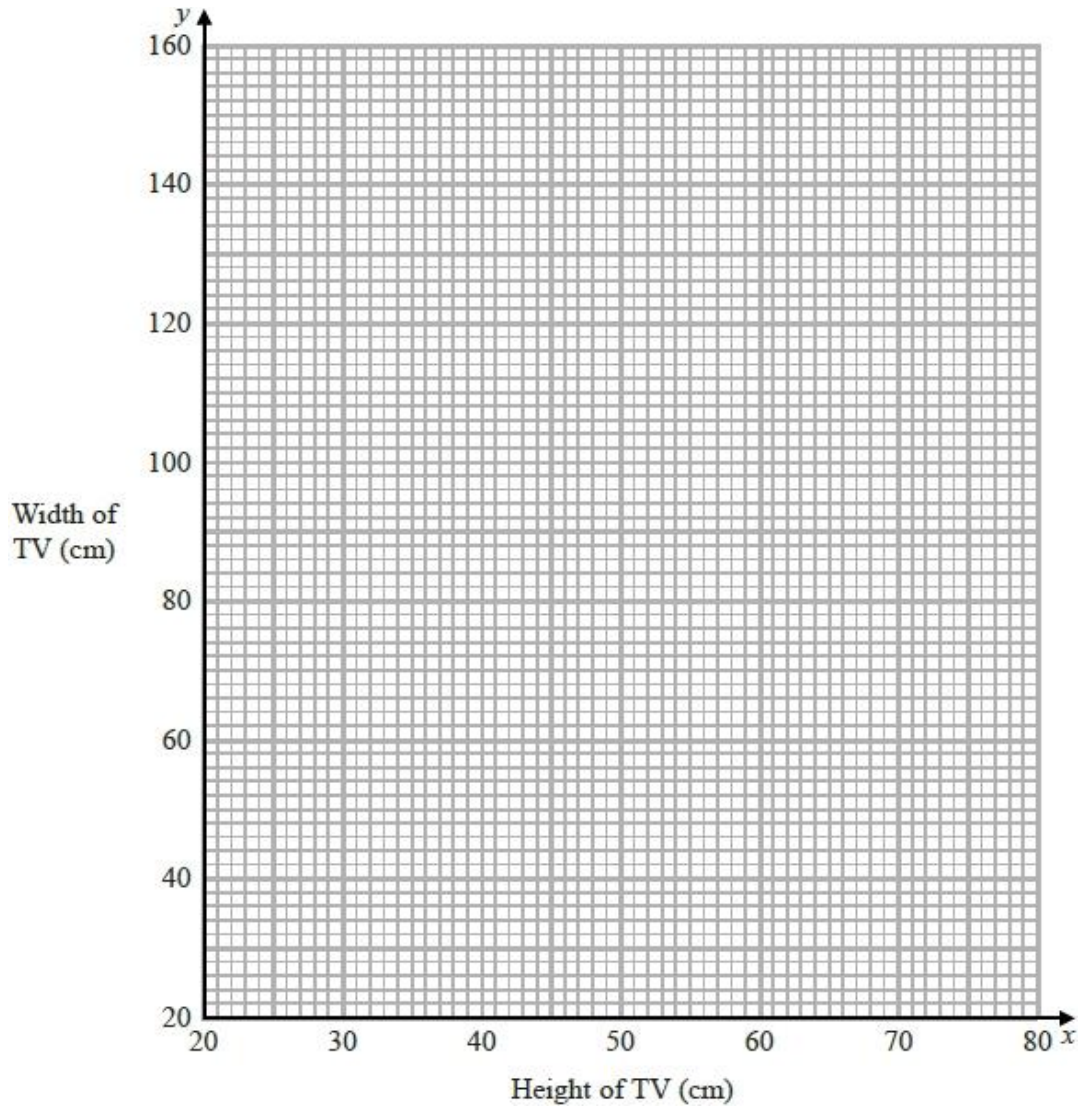
(Total for question = 4 marks)

Q4.

The height (x cm) and the width (y cm) of TVs are in the ratio 9 : 16

(a) Use this information to draw a graph to show the relationship between the height and the width of TVs.

Use values of x from 20 to 80



(2)

A TV has a width of 90 cm.

(b) Use your graph to work out the height of this TV.

..... cm

(1)

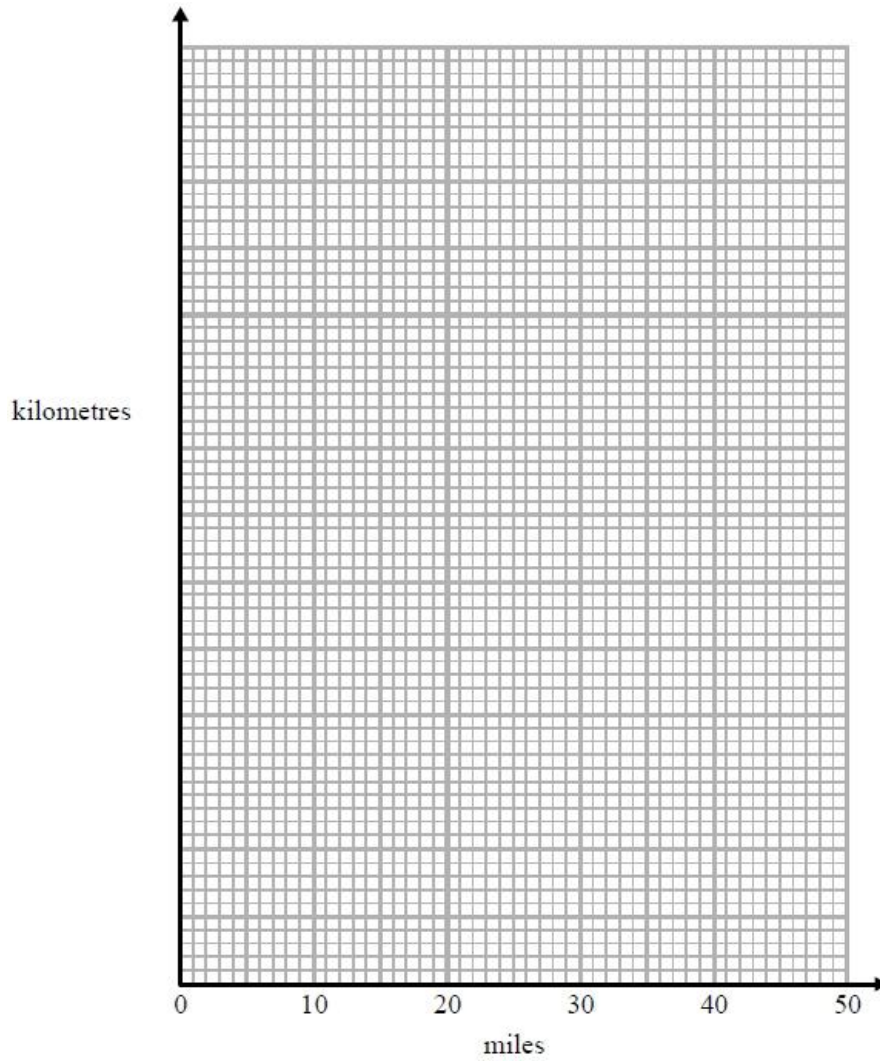
(Total for question = 3 marks)

Q5.

You can use the information in the table to convert between kilometres and miles.

miles	0	5	20	40
kilometres	0	8	32	64

(a) Use this information to draw a conversion graph.



(3)

(b) Which is further, 20 kilometres or 15 miles?
You must show how you got your answer.

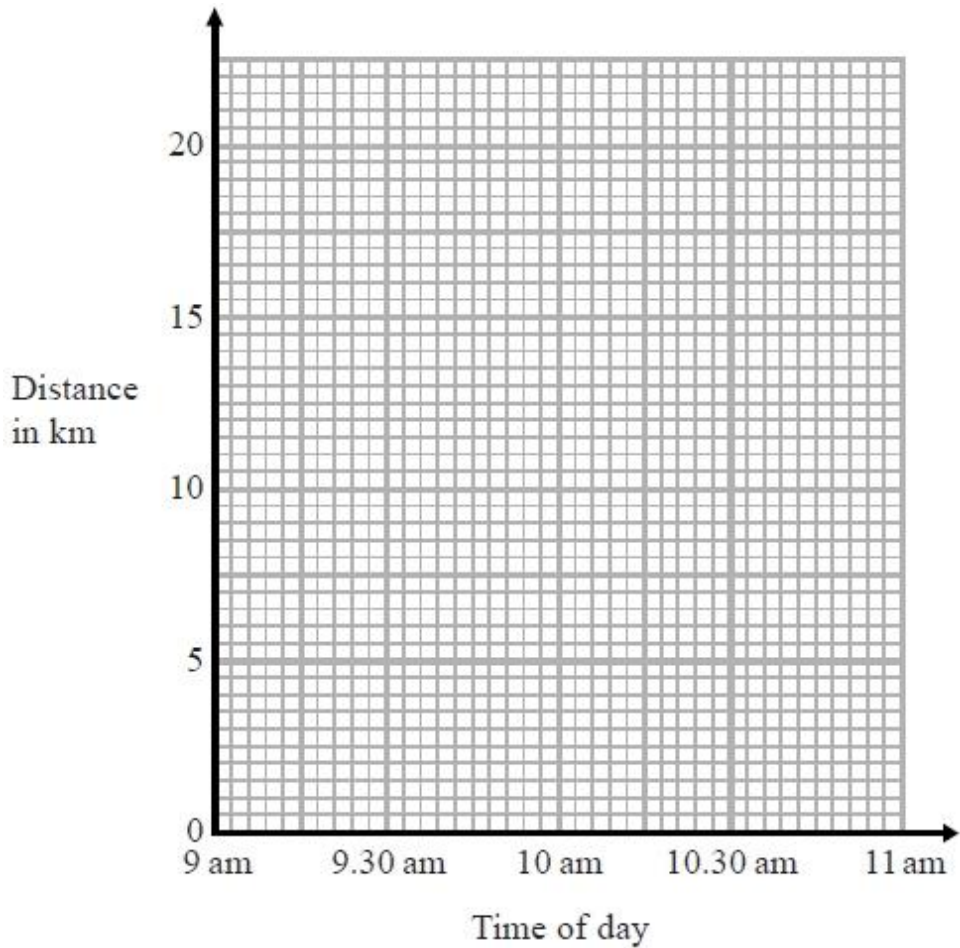
(2)

(Total for question = 5 marks)

Q6.

At 9 am, Bradley began a journey on his bicycle.
From 9 am to 9.36 am, he cycled at an average speed of 15 km/h.
From 9.36 am to 10.45 am, he cycled a further 8 km.

(a) Draw a travel graph to show Bradley's journey.



(3)

From 10.45 am to 11 am, Bradley cycled at an average speed of 18 km/h.

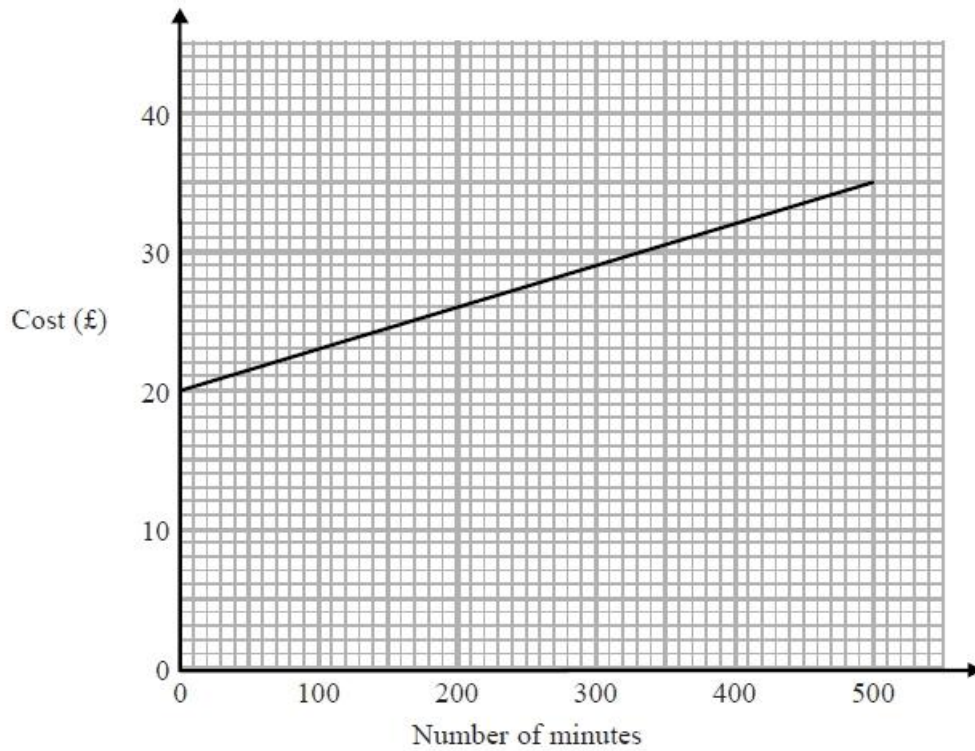
(b) Work out the distance Bradley cycled from 10.45 am to 11 am.

..... km
(2)

(Total for question is 5 marks)

Q7.

The graph shows the cost of using a mobile phone for one month for different numbers of minutes of calls made.



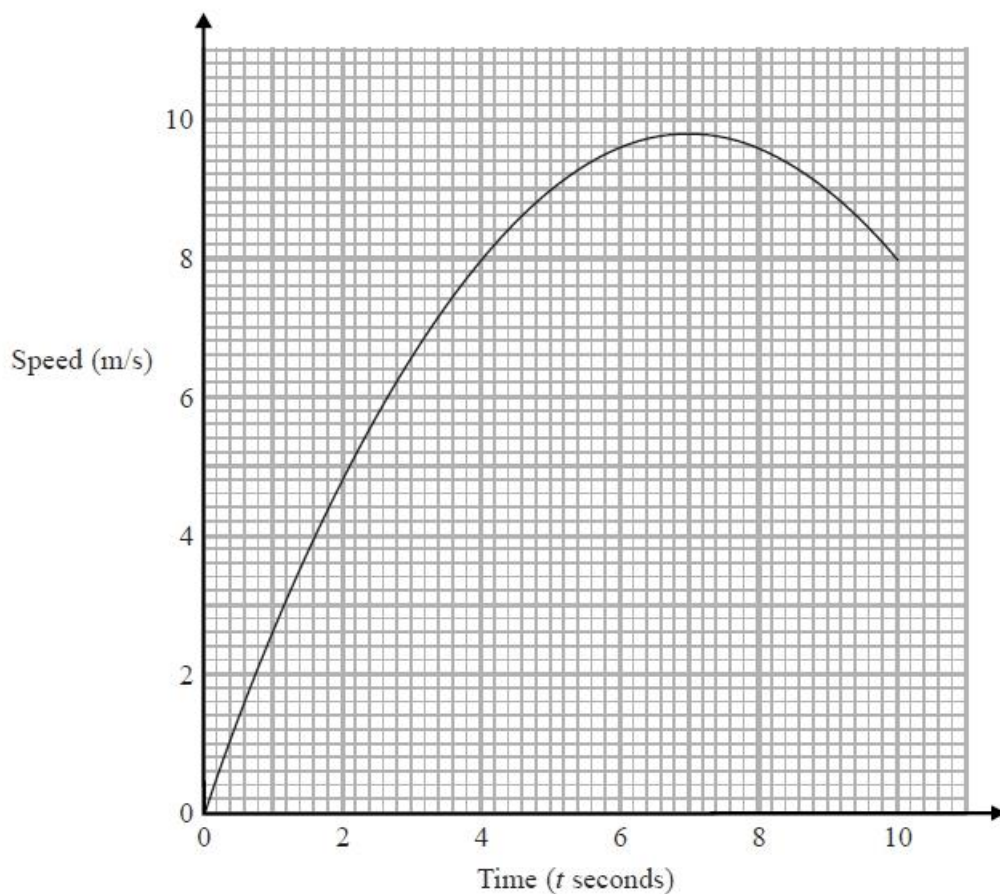
The cost includes a fixed rental charge of £20 and a charge for each minute of calls made. Work out the charge for each minute of calls made.

.....
(Total for question = 2 marks)

Q8.

Karol ran in a race.

The graph shows her speed, in metres per second, t seconds after the start of the race.



(a) Write down Karol's speed 3 seconds after the start of the race.

..... m/s
(1)

(b) Write down Karol's greatest speed.

..... m/s
(1)

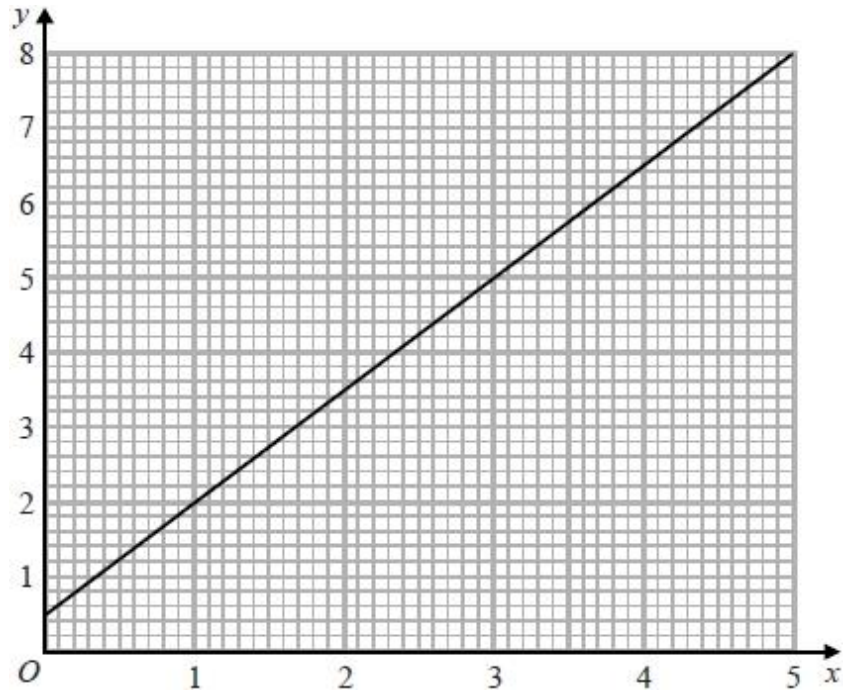
There were two times when Karol's speed was 9 m/s.

(c) Write down these two times.

..... seconds
..... seconds
(1)

(Total for question = 3 marks)

Q9.



Phone calls cost £ y for x minutes.

The graph gives the values of y for values of x from 0 to 5

(a) (i) Give an interpretation of the intercept of the graph on the y -axis.

.....
.....

(ii) Give an interpretation of the gradient of the graph.

.....
.....

(2)

(b) Find the equation of the straight line in the form $y = mx + c$

.....

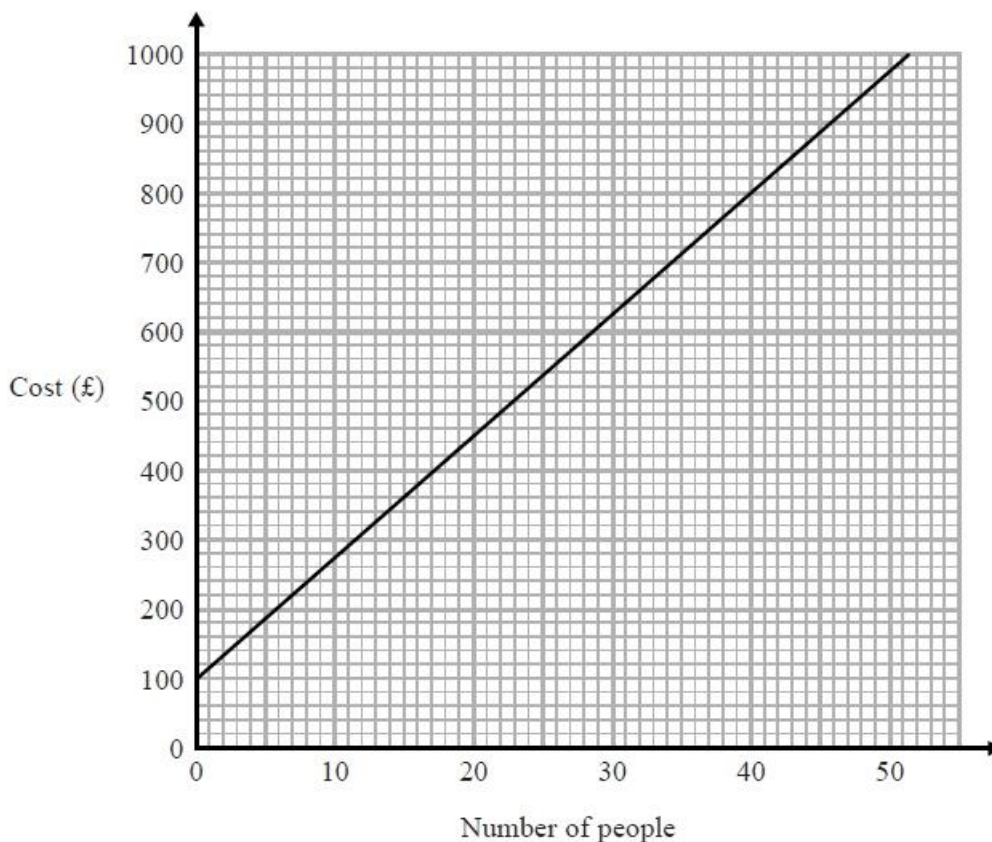
(3)

(Total for question = 5 marks)

Q10.

Judith and Simon are organising different parties at a hotel.

This graph can be used to find the cost, in pounds (£), for different numbers of people.



Judith has £700 to spend on a party.

(a) Find the greatest number of people she can have at her party.

.....
(1)

Simon is organising a party for 20 people.

(b) Use the graph to find the cost.

£
(1)

More than 20 people want to go to Simon's party.

(c) Work out the cost for each extra person.

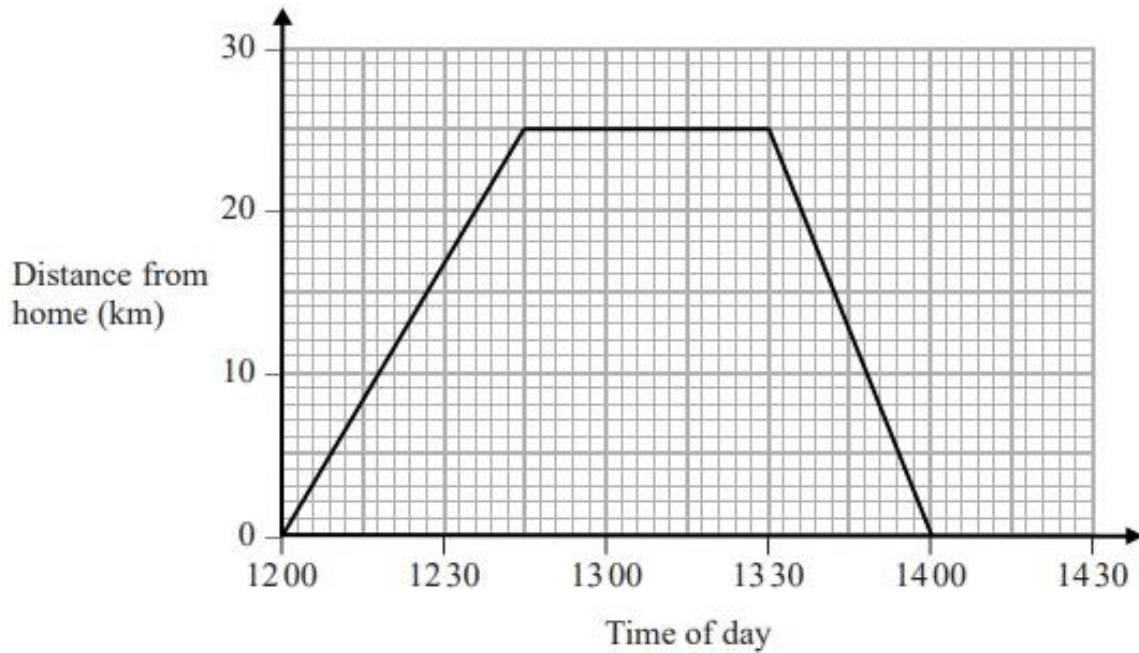
£
(2)

(Total for question = 4 marks)

Q11.

Steve drove from his home to his friend's house.
He stayed at his friend's house and then drove home.

Here is Steve's travel graph.



(a) For how many minutes did Steve stay at his friend's house?

..... minutes

(1)

(b) What was Steve's average speed on his journey home?

..... km/h

(2)

(Total for question = 3 marks)