

**AUTUMN 2016 – GCSE 9-1**  
**MOCK FOUNDATION PAPER 1**  
**ALTERNATIVE VERSION**

This version was kindly put together by Graham Cumming at Edexcel and some of the questions have been adapted to “strip out” the sums as part of an exercise I did with my year 9’s looking at how they can approach the questions without focusing on the sums that are required.

Please note that **not all of the questions have been changed!!**

I wrote about it here -> [BLOG POST](#)

Mel – JustMaths

**Instructions**

- Use **black** ink or ball-point pen.
- **Fill in the boxes** at the top of this page with your name, centre number and candidate number.
- Answer ALL questions.
- Answer the questions in the spaces provided – *there may be more space than you need.*
- **Calculators may not be used.**
- Diagrams are **NOT** accurately drawn, unless otherwise indicated.
- You must **show all your working out.**



**Information**

- The total mark for this paper is 80.
- The marks for **each** question are shown in brackets – *use this as a guide as to how much time to spend on each question.*
- Some questions (\*) revised after comments from Just Maths

**Advice**

- Read each question carefully before you start to answer it.
- Keep an eye on the time.
- Try to answer every question.
- Check your answers if you have time at the end.

**Answer ALL questions.**

**Write your answers in the spaces provided.**

**You must write down all the stages in your working.**

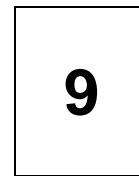
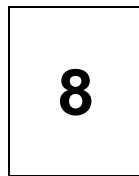
1. Write these numbers in order of size.  
Start with the smallest number.

4   -4   1   0   -2

.....  
**(Total for Question 1 is 1 mark)**

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2. Here are four cards.  
There is a number on each card.



- (a) Write down the largest 4-digit number that can be made using each card only once.

.....  
**(1)**

- (b) Write down the smallest 4-digit even number that can be made using each card only once.

.....  
**(1)**

**(Total for Question 2 is 2 marks)**

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3. Write  $\frac{7}{20}$  as a percentage.

..... %

**(Total for Question 3 is 1 mark)**

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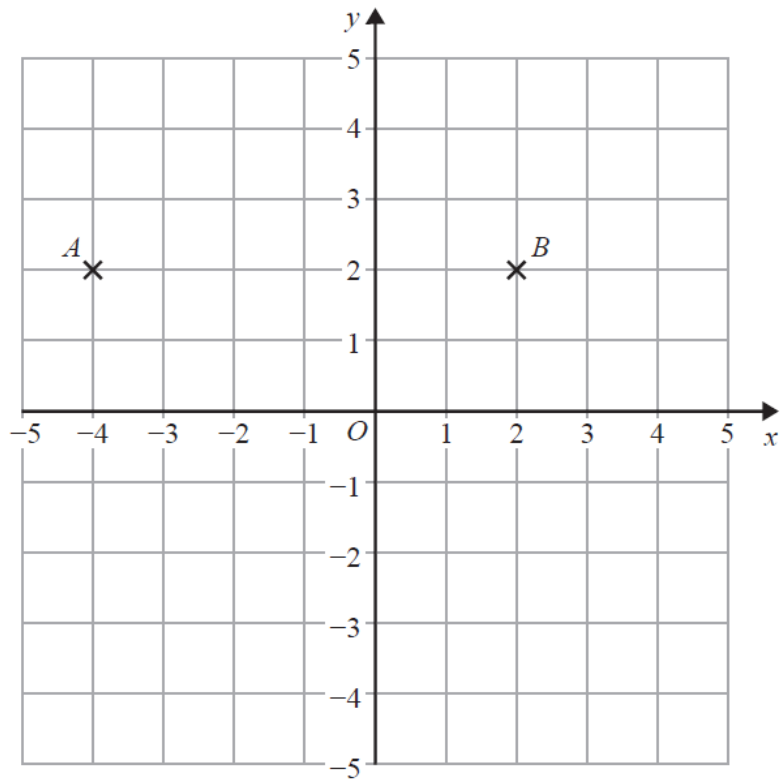
4. Work out 20% of £50.

£ .....

**(Total for Question 4 is 2 marks)**

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5.



(a) On the grid, mark with a cross (×) the point  $(-2, -3)$ .  
Label the point  $C$ .

(1)

(b) Write down the coordinates of the midpoint of  $AB$ .

(....., .....) )

(1)

(Total for Question 5 is 2 marks)

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**\*6.**

|        |     |
|--------|-----|
| pen    | 32p |
| pencil | 8p  |

Rosie has £15 to spend on pens and pencils.

She has to buy the same number of pens as pencils.

What is the greatest number of pens she can buy?

.....  
**(Total for Question 6 is 3 marks)**

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7 Here are the ages of 16 men.

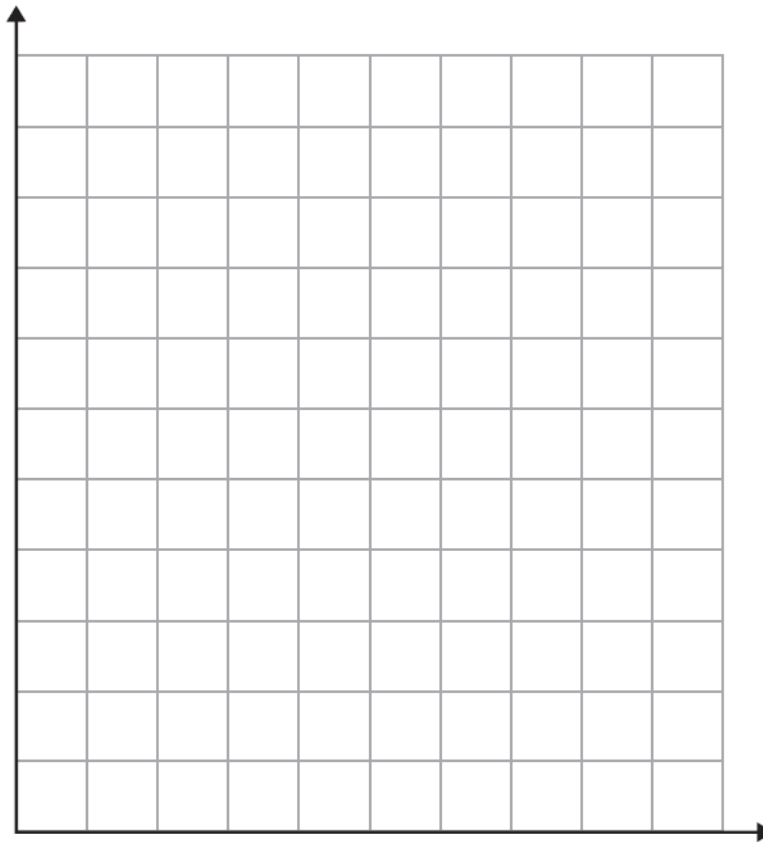
28 30 40 37 35 31 29 39  
34 33 35 28 40 29 27 35

(a) Complete the table to show this information.

| Age   | Tally | Frequency |
|-------|-------|-----------|
| 27–29 |       |           |
| 30–32 |       |           |
| 33–35 |       |           |
| 36–38 |       |           |
| 39–41 |       |           |

(2)

(b) On the grid, draw a suitable diagram or chart for the information in the table.



(3)

(Total for Question 7 is 5 marks)

8 The stem and leaf diagram shows information about the heights, in cm, of the boys in a class.

|    |   |   |   |   |   |   |
|----|---|---|---|---|---|---|
| 14 | 0 | 2 | 9 |   |   |   |
| 15 | 1 | 1 | 3 | 5 | 7 |   |
| 16 | 2 | 4 | 5 | 7 | 8 | 9 |
| 17 | 6 | 6 | 7 | 9 |   |   |
| 18 | 0 | 0 | 1 |   |   |   |

|                               |
|-------------------------------|
| Key: 15   1 represents 151 cm |
|-------------------------------|

(a) Find the median height.

..... cm

**(1)**

The girls in the class have a median height of 162 cm.  
 Their heights have a range of 45 cm.

(b) Compare the distribution of the heights of the boys with the distribution of the heights of the girls.

.....

.....

.....

.....

**(2)**

**(Total for Question 8 is 3 marks)**

- \*9. The formulae below can be used to work out the cost, £ $C$ , of a taxi journey of  $x$  miles with three different taxi companies.

**Reliable Taxis**

$$C = 3x$$

**Speedy Taxis**

$$C = 2x + 20$$

**City Taxis**

$$C = x + 55$$

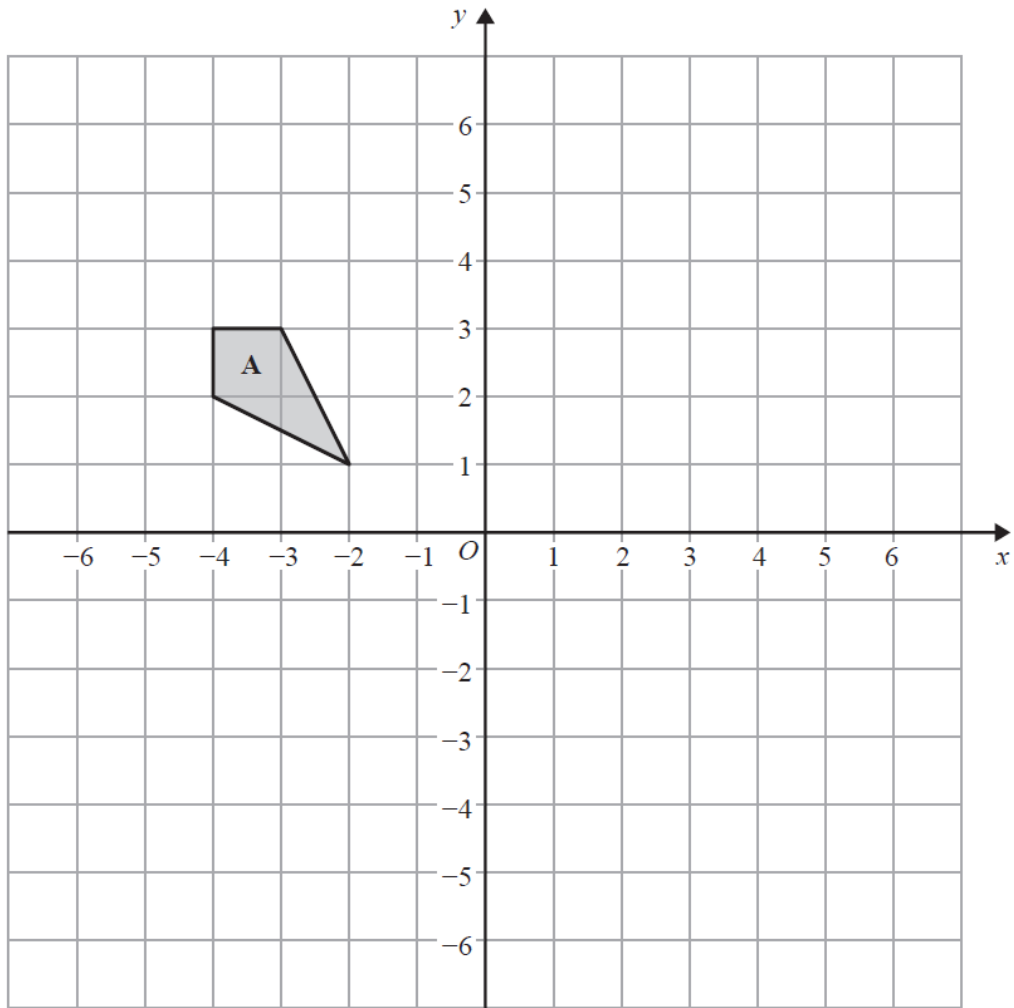
Which is the cheapest company to use for a taxi journey of 30 miles?  
You must show how you get your answer.

**(Total for Question 9 is 3 marks)**

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10.



(a) On the grid, translate shape **A** by the vector  $\begin{pmatrix} 6 \\ -5 \end{pmatrix}$

Label the new shape **B**.

(1)

(b) On the grid, translate shape **B** by the vector  $\begin{pmatrix} -8 \\ 8 \end{pmatrix}$

Label the new shape **C**.

(1)

(c) Write down the column vector for the translation that maps shape **A** onto shape **C**.

$\begin{pmatrix} \phantom{0} \\ \phantom{0} \end{pmatrix}$

.....

(1)

(Total for Question 10 is 3 marks)

11. (a) Simplify  $x + x + x + y + y$

.....  
(1)

(b) Simplify  $3p + 7q - p - 4q$

.....  
(2)

(c) Expand  $6(2m - 3)$

.....  
(1)

(d) Solve  $7f + 6 = 27$

$f =$  .....  
(2)

**(Total for Question 11 is 6 marks)**

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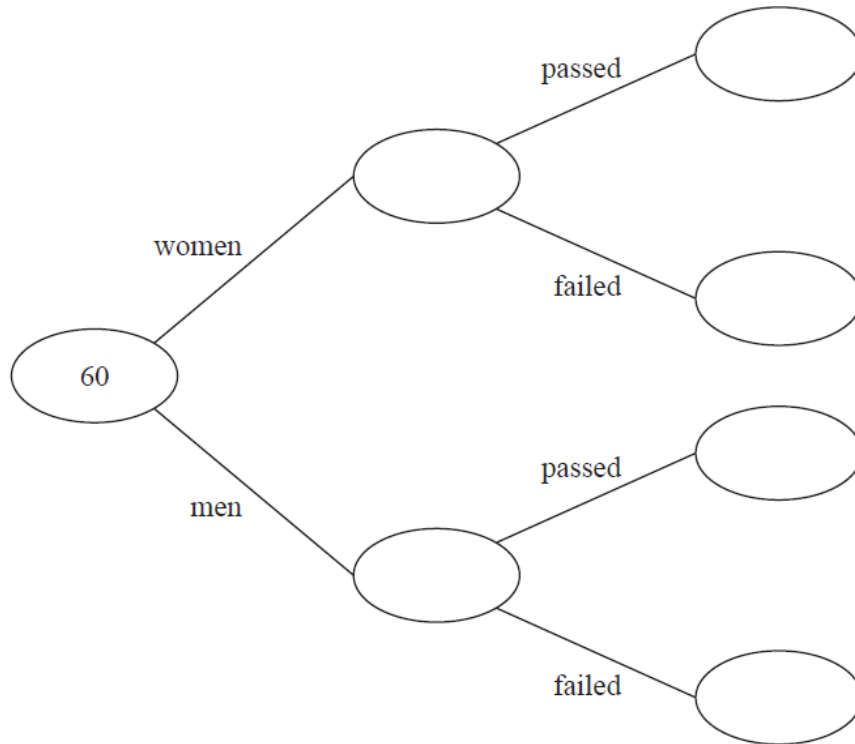
12. 60 people each took a driving test one day.

21 of these people were women.

18 of the 60 people failed their test.

27 of the men passed their test.

(a) Use this information to complete the frequency tree.



(3)

One of the men is chosen at random.

(b) Work out the probability that this man failed his test.

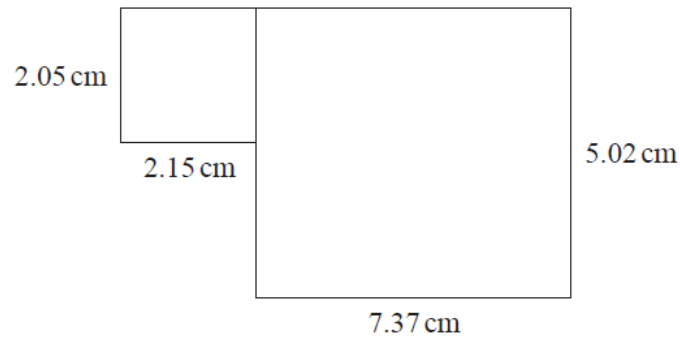
.....

(2)

(Total for Question 12 is 5 marks)

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13. This shape is made from two rectangles.



(a) Work out an estimate for the total area of the shape.

..... cm<sup>2</sup>  
(3)

(b) Is your answer to (a) an overestimate or an underestimate?  
Give a reason for your answer.

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

(Total for Question 13 is 4 marks)

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14. A cafe sells cakes and scones.

On Tuesday, the ratio of the number of cakes sold to the number of scones sold was 5 : 2

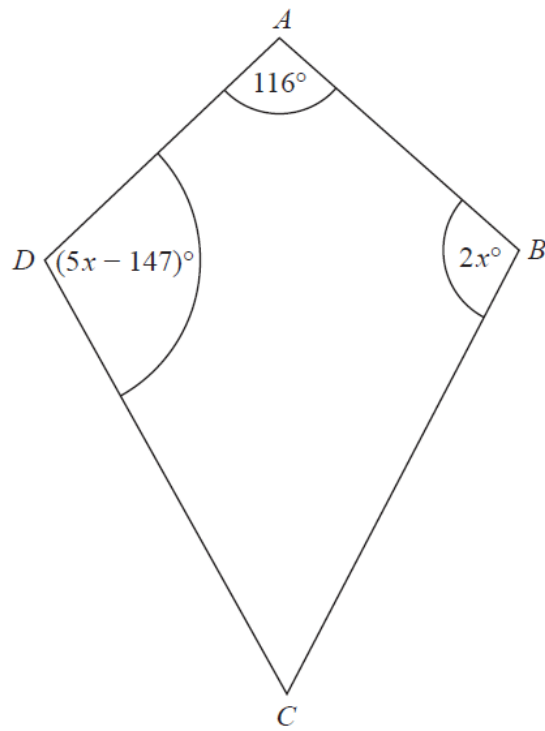
On Tuesday, the cafe sold 80 scones.

How many cakes were sold on Tuesday?

.....  
(Total for Question 14 is 2 marks)

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**\*15.**  $ABCD$  is a kite with  $AD = AB$



Find the size of the angle  $C$ .

.....<sup>o</sup>  
**(Total for Question 15 is 4 marks)**

**\*16.** Change  $4000 \text{ mm}^3$  into  $\text{cm}^3$ .

.....  $\text{cm}^3$

**(Total for Question 16 is 2 marks)**

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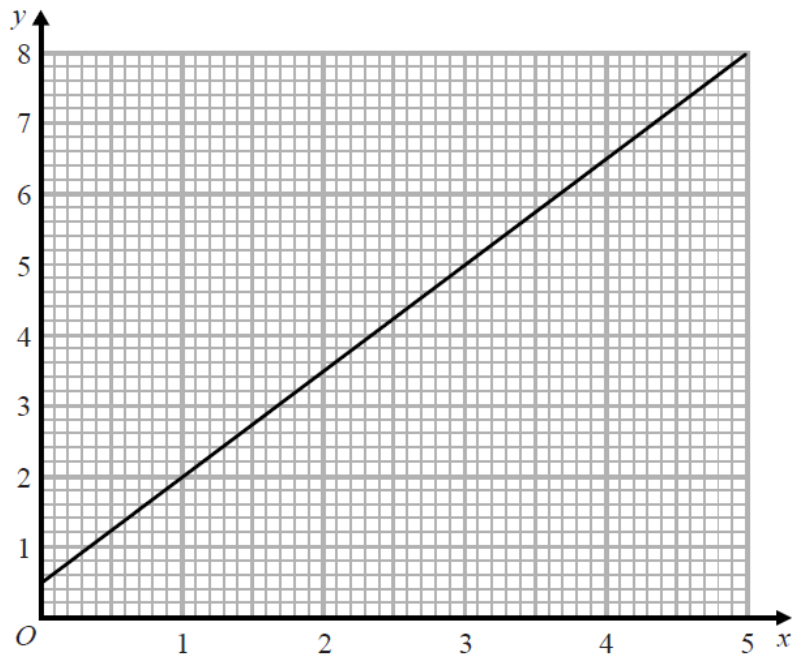
**17.** Work out  $2\frac{3}{5} - 1\frac{5}{6}$

.....

**(Total for Question 17 is 3 marks)**

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18.



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)

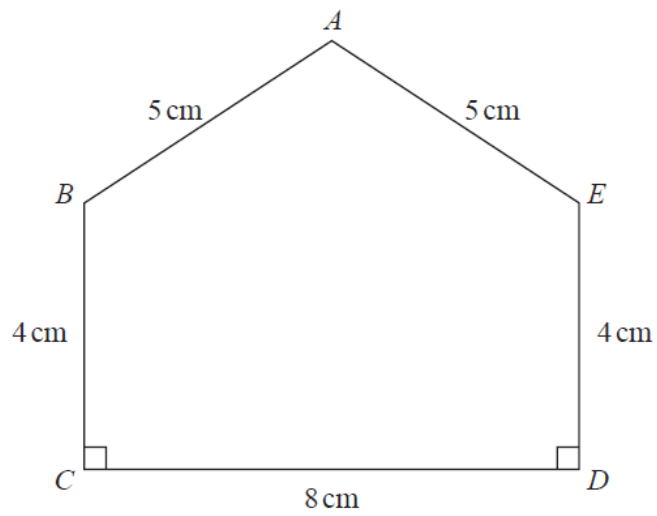
(b) Find the equation of the straight line in the form  $y = m x + c$

.....

(3)

(Total for Question 18 is 5 marks)

19.  $ABCDE$  is a pentagon.



Work out the area of  $ABCDE$ .

.....  $\text{cm}^2$

**(Total for Question 19 is 5 marks)**



20. On Monday, Tarek travelled by train from Manchester to London.

Tarek's train left Manchester at 08 35

It got to London at 11 05

The train travelled at an average speed of 110 miles per hour.

On Wednesday, Gill travelled by train from Manchester to London.

Gill's train also left at 08 35 but was diverted.

The train had to travel an extra 37 miles.

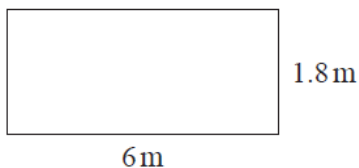
The train got to London at 11 35

Work out the difference between the average speed of Tarek's train and the average speed of Gill's train.

..... miles per hour

**(Total for Question 20 is 4 marks)**

21. The diagram shows a rectangular wall.



Frank is going to cover the wall with rectangular tiles.

Each tile is 60 cm by 30 cm.

$\frac{3}{5}$  of the tiles will be white.

Some of the tiles will be green.

The rest of the tiles will be blue.

The ratio of the number of green tiles to the number of blue tiles will be 1 : 3

(a) Assuming there are no gaps between the tiles, how many tiles of each colour will Frank need?

white tiles .....

green tiles .....

blue tiles .....

(5)

Frank is told that he should leave gaps between the tiles.

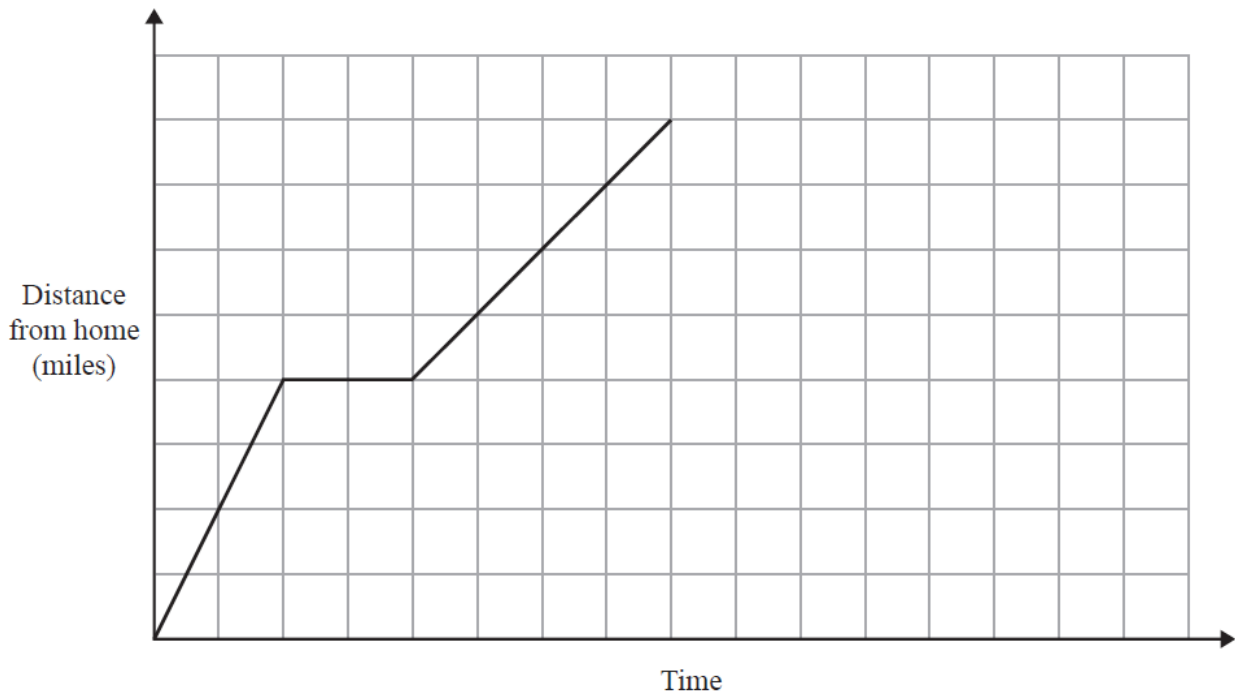
(b) If Frank leaves gaps between the tiles, how could this affect the number of tiles he needs?

.....  
.....

(1)

(Total for Question 21 is 6 marks)

22. 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 22 is 4 marks)**

23. A number,  $y$ , is rounded to 2 significant figures.

The result is 0.46.

Write down the error interval for  $y$ .

.....  
**(Total for Question 23 is 2 marks)**

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24. Write 360 as a product of its prime factors.

.....  
**(Total for Question 24 is 3 marks)**

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**TOTAL FOR PAPER: 80 MARKS**