

Write your name here

Surname

Other names

**Pearson Edexcel  
International GCSE**

Centre Number

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Candidate Number

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# Mathematics A

## Paper 1F

**Foundation Tier**

Monday 8 January 2018 – Morning

**Time: 2 hours**

Paper Reference

**4MA0/1F****You must have:**

Ruler graduated in centimetres and millimetres, protractor, compasses, pen, HB pencil, eraser, calculator. Tracing paper may be used.

Total Marks

### 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.
- Without sufficient working, correct answers may be awarded no marks.
- Answer the questions in the spaces provided  
– *there may be more space than you need.*
- **Calculators may be used.**
- You must **NOT** write anything on the formulae page.  
Anything you write on the formulae page will gain NO credit.

### Information

- The total mark for this paper is 100.
- The marks for **each** question are shown in brackets  
– *use this as a guide as to how much time to spend on each question.*

### Advice

- Read each question carefully before you start to answer it.
- Check your answers if you have time at the end.

Turn over ►

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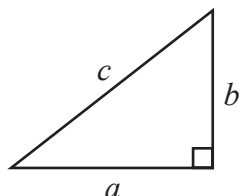


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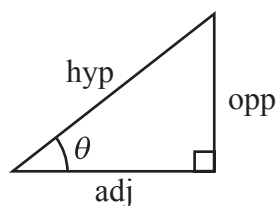
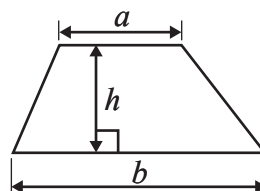
## International GCSE MATHEMATICS

## FORMULAE SHEET – FOUNDATION TIER

Pythagoras' Theorem  
 $a^2 + b^2 = c^2$



Area of a trapezium =  $\frac{1}{2}(a + b)h$



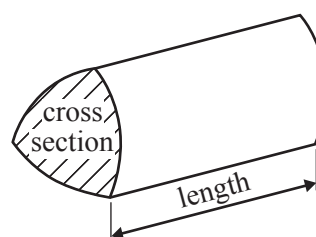
$$\begin{aligned}\text{adj} &= \text{hyp} \times \cos \theta \\ \text{opp} &= \text{hyp} \times \sin \theta \\ \text{opp} &= \text{adj} \times \tan \theta\end{aligned}$$

Volume of prism = area of cross section  $\times$  length

$$\text{or} \quad \sin \theta = \frac{\text{opp}}{\text{hyp}}$$

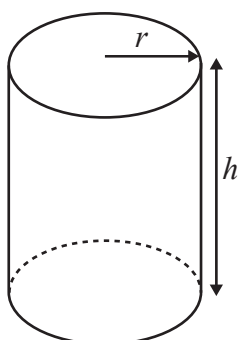
$$\cos \theta = \frac{\text{adj}}{\text{hyp}}$$

$$\tan \theta = \frac{\text{opp}}{\text{adj}}$$



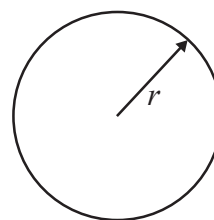
Circumference of circle =  $2\pi r$

Area of circle =  $\pi r^2$



Volume of cylinder =  $\pi r^2 h$

Curved surface area  
of cylinder =  $2\pi r h$



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**Answer ALL TWENTY FOUR questions.**

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

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

- 1** (a) Write the number 46 207 in words.

.....  
(1)

- (b) Write down the value of the 3 in the number 43 980

.....  
(1)

- (c) Write a number on the dotted line so that the calculation is correct.

$$..... + 56 = 879$$

.....  
(1)

- (d) Write down the square number that is between 31 and 44

.....  
(1)

- (e) Write 16.76 correct to the nearest whole number.

.....  
(1)

- (f) Write  $\frac{7}{16}$  as a decimal.

.....  
(1)

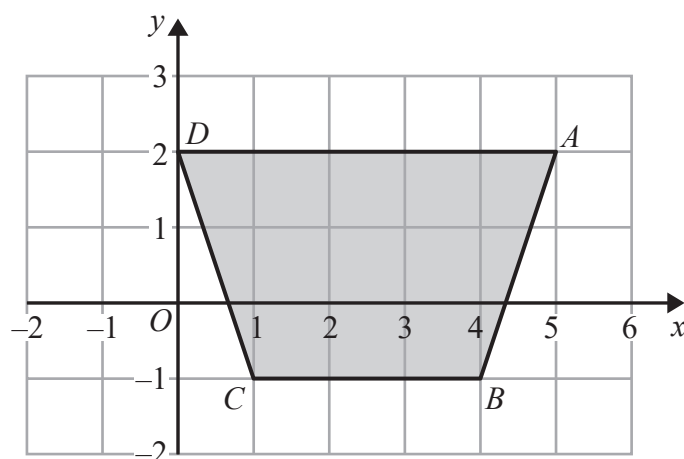
- (g) Shade 20% of this shape.


.....  
(1)

**(Total for Question 1 is 7 marks)**



- 2 The diagram shows a quadrilateral  $ABCD$  drawn on a grid.



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- (a) Write down the coordinates of

(i) point  $A$

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

(ii) point  $C$

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

(2)

- (b) Write down the mathematical name for the quadrilateral  $ABCD$ .

(1)

- (c) Work out the coordinates of the midpoint of  $BD$ .

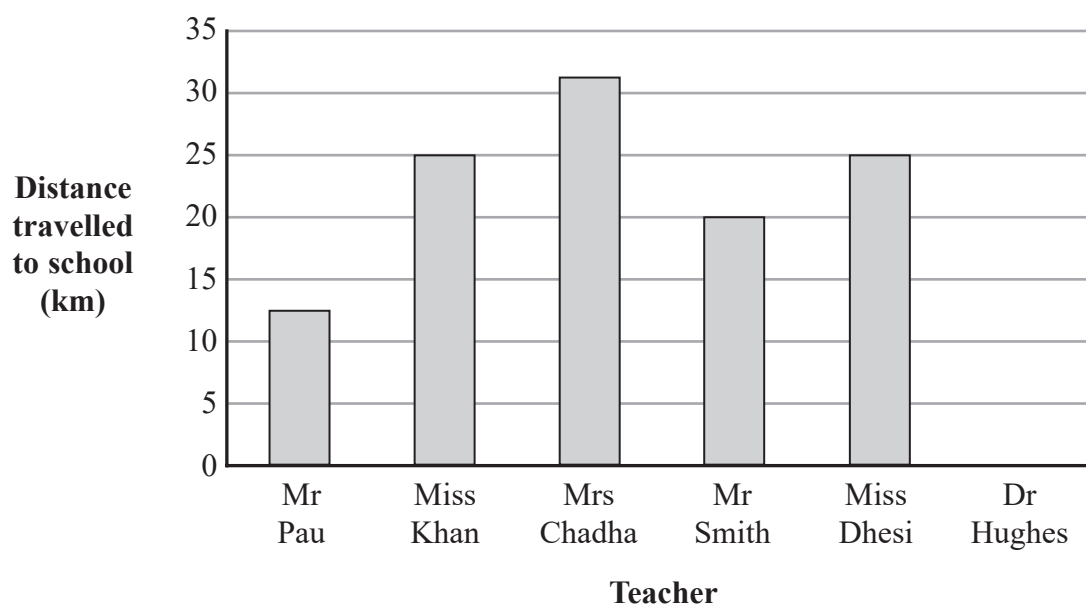
(....., .....)

(2)

(Total for Question 2 is 5 marks)



- 3 The bar chart shows information about the distance travelled to school by each of five teachers.



Two of the teachers travelled the same distance to school.

- (a) Which two teachers?

(1)

Dr Hughes travelled 28 km to school.

- (b) Draw a bar on the bar chart for this information.

(1)

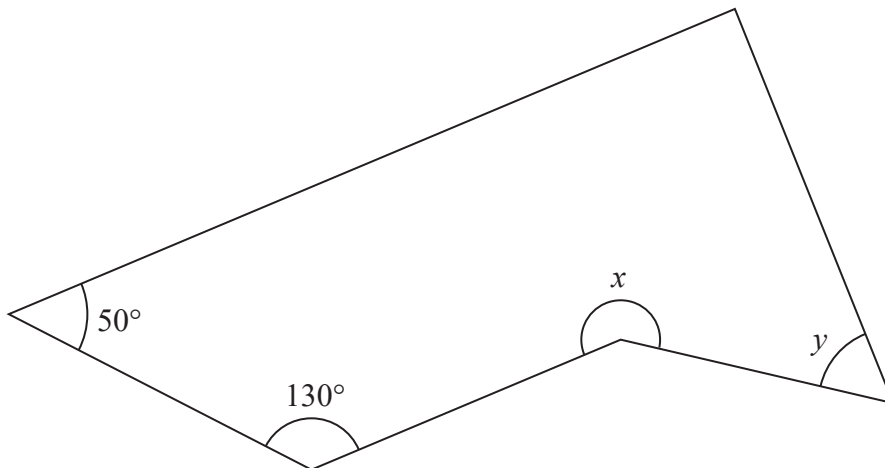
- (c) Write down the name of the teacher who travelled the greatest distance to school.

(1)

(Total for Question 3 is 3 marks)



4 Here is a shape.



(a) What type of angle is the angle marked  $x$ ?

.....  
(1)

(b) Measure the size of the angle marked  $y$ .

.....  
(1)

(c) On the diagram, mark with arrows ( $>>$ ) the pair of parallel lines.

.....  
(1)

(Total for Question 4 is 3 marks)

5 Here are the first five terms of a number sequence.

5                      17                      29                      41                      53

(a) Work out the next term of the sequence.

.....  
(1)

The 40th term of the sequence is 473

(b) Work out the 39th term of the sequence.

.....  
(1)

(Total for Question 5 is 2 marks)



- 6 (a) Complete the following sentences by writing a suitable metric unit on each of the dotted lines.

(i) The weight of a pen is 14 .....

(ii) The length of a table is 1.8 .....

(2)

- (b) Change 3.9 litres into millilitres.

.....millilitres  
(1)

(Total for Question 6 is 3 marks)

- 7 (a) Write down the number that is exactly halfway between 14.31 and 14.34

.....  
(1)

- (b) Write 0.28 as a percentage.

.....%  
(1)

- (c) Find the square root of 3.61

.....  
(1)

- (d) Write these decimals in order of size.  
Start with the smallest decimal.

0.0601

0.0062

0.63

0.063

0.00605

.....  
(1)

(Total for Question 7 is 4 marks)



8 (a) Solve  $3q = 42$

$$q = \dots\dots\dots (1)$$

(b) Solve  $18 - y = 6$

$$y = \dots\dots\dots (1)$$

(c) Solve  $\frac{k}{3} = 12$

$$k = \dots\dots\dots (1)$$

(d) Simplify  $c \times 2 \times d$

$$\dots\dots\dots (1)$$

(e) Simplify  $9x^2 + 7x^2 - 2x^2$

$$\dots\dots\dots (1)$$

(f) Expand  $3(2m + 5)$

$$\dots\dots\dots (1)$$

(Total for Question 8 is 6 marks)





- 9 Sophie makes 160 cupcakes for a charity cake stall.

30% of the cupcakes are chocolate.

$\frac{3}{8}$  of the cupcakes are lemon.

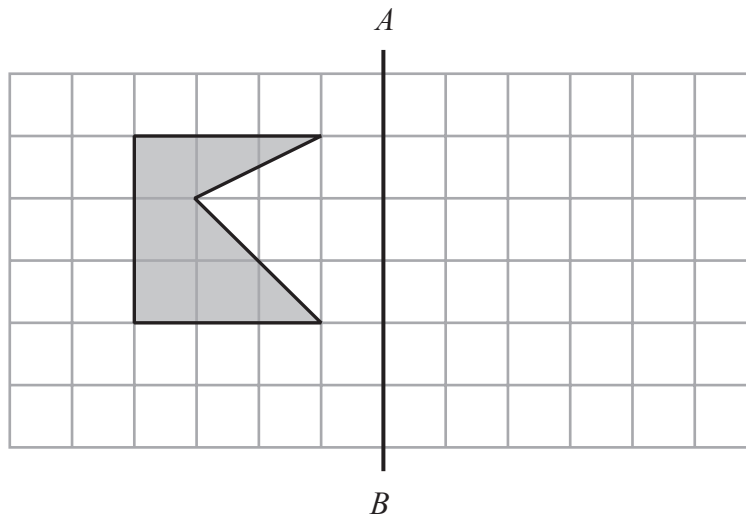
The rest of the cupcakes are blueberry.

Work out the number of blueberry cupcakes Sophie makes.

(Total for Question 9 is 4 marks)

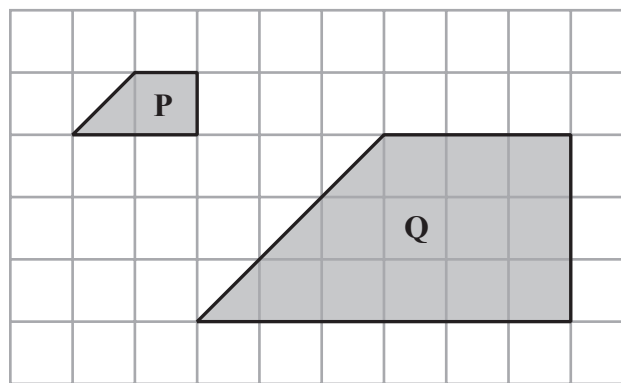


- 10 (a) On the grid, reflect the shaded shape in the line  $AB$ .



(1)

Shape  $Q$  is an enlargement of shape  $P$ .



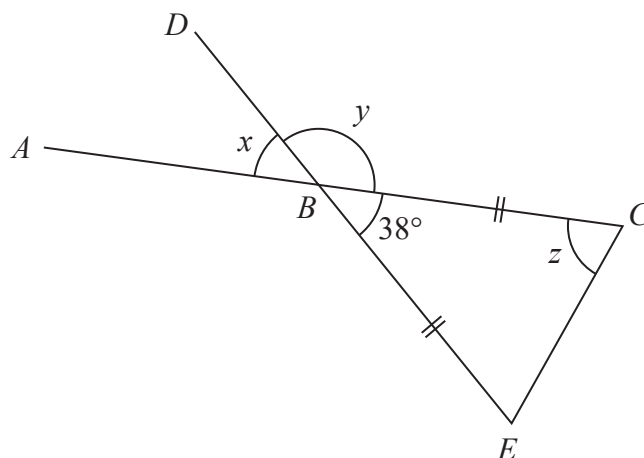
- (b) Write down the scale factor of the enlargement.

.....  
(1)

(Total for Question 10 is 2 marks)



11

Diagram **NOT**  
accurately drawn

$ABC$  and  $DBE$  are straight lines.

(a) Find the size of angle  $x$ .

.....  
(1)

(b) (i) Work out the size of angle  $y$ .

(ii) Give a reason for your answer.

.....  
(2)

$$BC = BE$$

(c) Work out the size of angle  $z$ .

.....  
(2)

(Total for Question 11 is 5 marks)



12 (a) Write  $9 \times 9 \times 9 \times 9 \times 9 \times 9$  as a single power of 9

.....  
(1)

(b) Write down the prime number that is between 21 and 28

.....  
(1)

(c) Find  $\sqrt[3]{19\,683}$

.....  
(1)

(d) Write  $\frac{5}{8}$  as a percentage.

.....%  
(1)

(Total for Question 12 is 4 marks)

13

£1 = 135 Japanese Yen (JPY)

(a) Change £320 into Japanese Yen.

.....JPY  
(1)

(b) Change 1728 Japanese Yen into pounds (£).

£.....  
(1)

(Total for Question 13 is 2 marks)

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- 14 (a) Write down the probability of an event that is certain to happen.

.....  
(1)

Eliya has a biased dice.

The probability that the dice will land on the number 5 is 0.3

- (b) Find the probability that the dice will **not** land on the number 5

.....  
(1)

Eliya throws the dice 150 times.

The probability that the dice will land on the number 5 is 0.3

- (c) Work out an estimate for the number of times that the dice will land on the number 5

.....  
(2)

(Total for Question 14 is 4 marks)

- 15 Write 360 as a product of its prime factors.  
Show your working clearly.

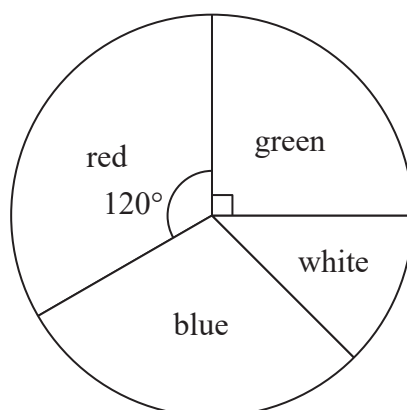
.....  
(Total for Question 15 is 2 marks)



16 Janine has a bag of buttons.

The buttons are green or red or white or blue.

The pie chart gives information about the number of buttons of each colour in Janine's bag.



There are 60 green buttons in the bag.

(a) Work out the total number of buttons in the bag.

(1)

(b) Work out the number of red buttons in the bag.

(1)

Janine also has a tin of counters.

The table gives information about the counters in Janine's tin.

Colour	Frequency
Black	40
Pink	30
Orange	55
Purple	75
<b>Total</b>	200

(c) Write down the fraction of the counters in Janine's tin that are black.  
Give your fraction in its simplest form.

(2)

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A pie chart is drawn to show information about the number of counters of each colour in Janine's tin.

- (d) Work out the size of the angle in the pie chart for the 30 pink counters.

.....  
(2)

(Total for Question 16 is 6 marks)

- 17 Pasquale has a map with a scale of 1:125 000

His house is 14 kilometres from an airport.

- (a) Work out the distance on Pasquale's map, in centimetres, from his house to the airport.

.....cm  
(2)

Luciana has a map with a scale of 1 :  $n$

Her house is 4.8 kilometres from a station.

On Luciana's map, the distance from her house to the station is 19.2 centimetres.

- (b) Work out the value of  $n$ .

$n =$  .....  
(2)

(Total for Question 17 is 4 marks)



- 18 (a) Use your calculator to work out the value of

$$\sqrt{\frac{8.9 + 2.345}{0.76 \times 2.9}}$$

Write down all the figures on your calculator display.

.....  
(2)

- (b) Give your answer to part (a) correct to 2 significant figures.

.....  
(1)

(Total for Question 18 is 3 marks)

19  $A = p^2 + 7q$

- (a) Work out the value of  $A$  when  $p = -7$  and  $q = 5$

$A =$  .....  
(2)

$A = p^2 + 7q$

- (b) Work out the value of  $q$  for which  $A = 100$  when  $p = 11$

$q =$  .....  
(3)

(Total for Question 19 is 5 marks)





- 20** Stephen has a biased 5-sided spinner.  
 He spins the spinner 80 times.  
 His score each time is the number that the spinner lands on.  
 The table shows information about his scores.

Number on spinner	Frequency
1	5
2	12
3	16
4	32
5	15

- (a) Find Stephen's median score.

.....  
 (2)

- (b) Work out Stephen's mean score.

.....  
 (3)

Stephen is going to spin the spinner once more.

- (c) Use the information in the table to find an estimate for the probability that the spinner will land on an even number.

.....  
 (2)

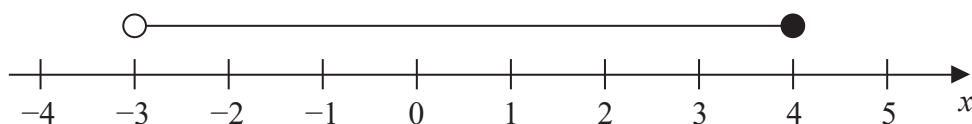
(Total for Question 20 is 7 marks)



- 21 (a) Solve the equation  $3(1 - 2y) = 2y - 7$   
Show clear algebraic working.

$y = \dots\dots\dots$   
(3)

- (b) Write down the inequality shown on the number line.



$\dots\dots\dots$   
(2)

- (c) Solve the inequality  $2m + 13 \geq 8$

$\dots\dots\dots$   
(2)

(Total for Question 21 is 7 marks)

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22

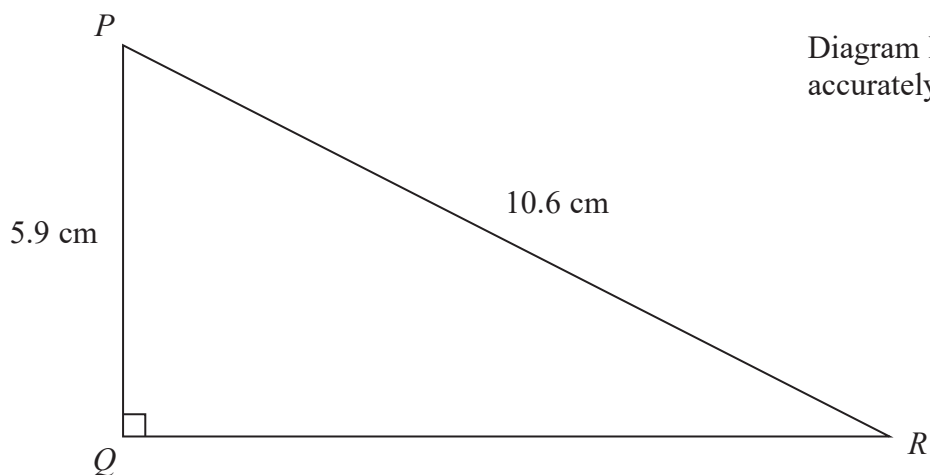


Diagram **NOT**  
accurately drawn

- (a) Work out the length of  $QR$ .  
Give your answer correct to 3 significant figures.

.....cm  
(3)

- (b) Work out the size of angle  $PRQ$ .  
Give your answer correct to 1 decimal place.

.....°  
(3)

The length of a line is 12.4 cm correct to one decimal place.

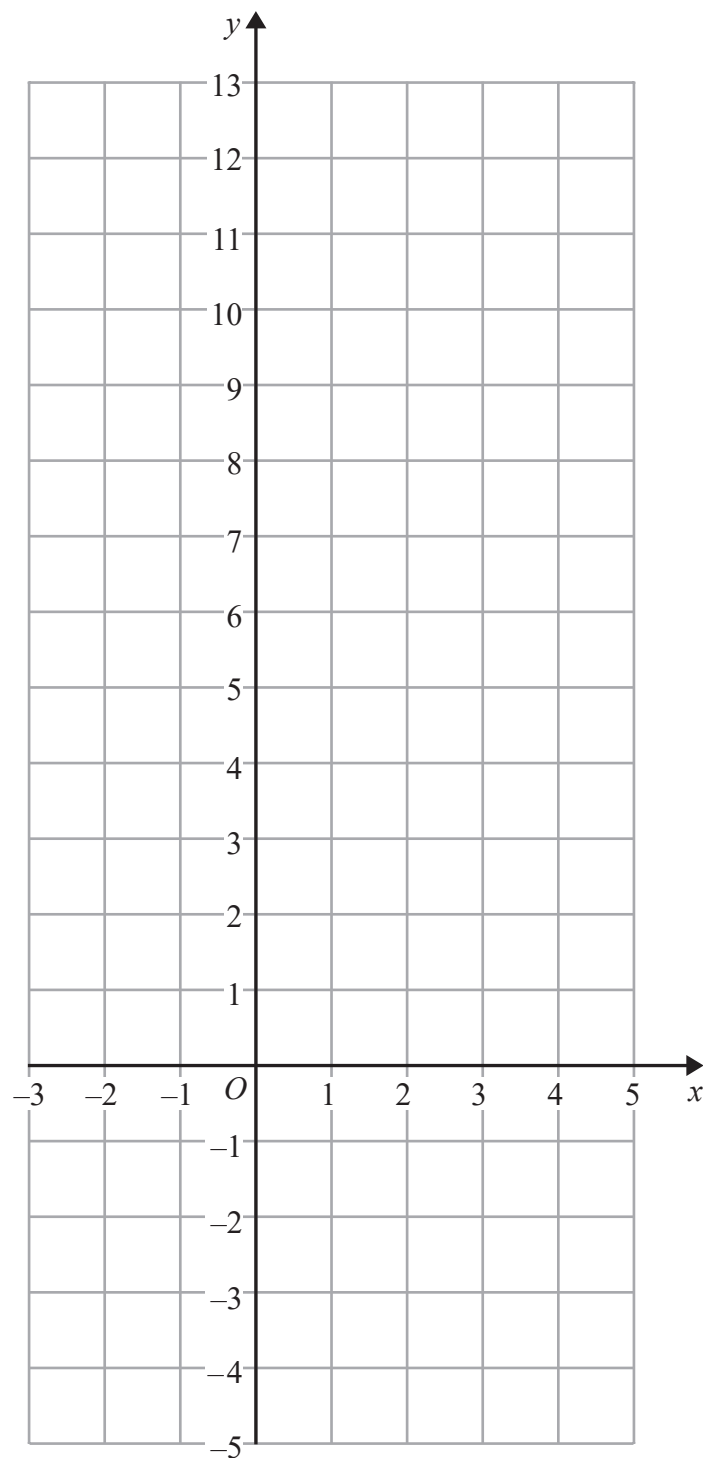
- (c) Write down the upper bound for the length of the line.

.....cm  
(1)

(Total for Question 22 is 7 marks)



23 On the grid, draw the graph of  $y = 5 - 3x$  for values of  $x$  from  $-2$  to  $3$



(Total for Question 23 is 3 marks)

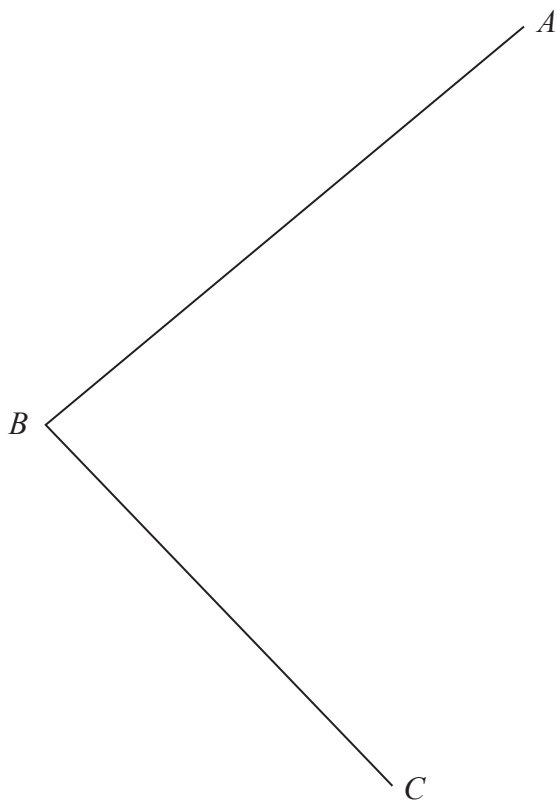
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- 24 Use ruler and compasses only to construct the bisector of angle  $ABC$ .  
You must show all your construction lines.



(Total for Question 24 is 2 marks)

**TOTAL FOR PAPER IS 100 MARKS**



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