

Write your name here

Surname

Other names

**Pearson**  
**Edexcel GCSE**

Centre Number

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Candidate Number

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# Mathematics A

## Paper 2 (Calculator)

**Foundation Tier**

Thursday 9 June 2016 – Morning

**Time: 1 hour 45 minutes**

Paper Reference

**1MA0/2F**

**You must have:** Ruler graduated in centimetres and millimetres, protractor, pair of 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.
- Answer the questions in the spaces provided – *there may be more space than you need.*
- **Calculators may be used.**
- If your calculator does not have a  $\pi$  button, take the value of  $\pi$  to be 3.142 unless the question instructs otherwise.



### 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.*
- Questions labelled with an **asterisk** (\*) are ones where the quality of your written communication will be assessed.

### 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.

Turn over ►

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P 4 9 3 0 3 R A 0 1 2 8

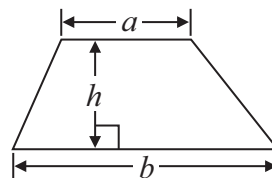
**PEARSON**

## GCSE Mathematics 1MA0

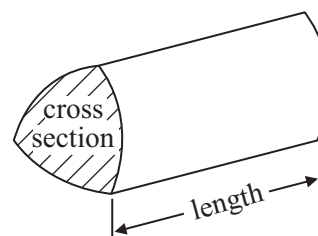
Formulae: Foundation Tier

**You must not write on this formulae page.  
Anything you write on this formulae page will gain NO credit.**

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



**Volume of prism**  $= \text{area of cross section} \times \text{length}$



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Answer ALL questions.

Write your answers in the spaces provided.

You must write down all stages in your working.

- 1 (a) Write the number 4726 in words.

(1)

- (b) Write the number **five million** in figures.

(1)

- (c) Write the number 3648 correct to the nearest hundred.

(1)

- (d) Write these numbers in order of size.  
Start with the smallest number.

7.47      7.6      7.04      7.58      7.69

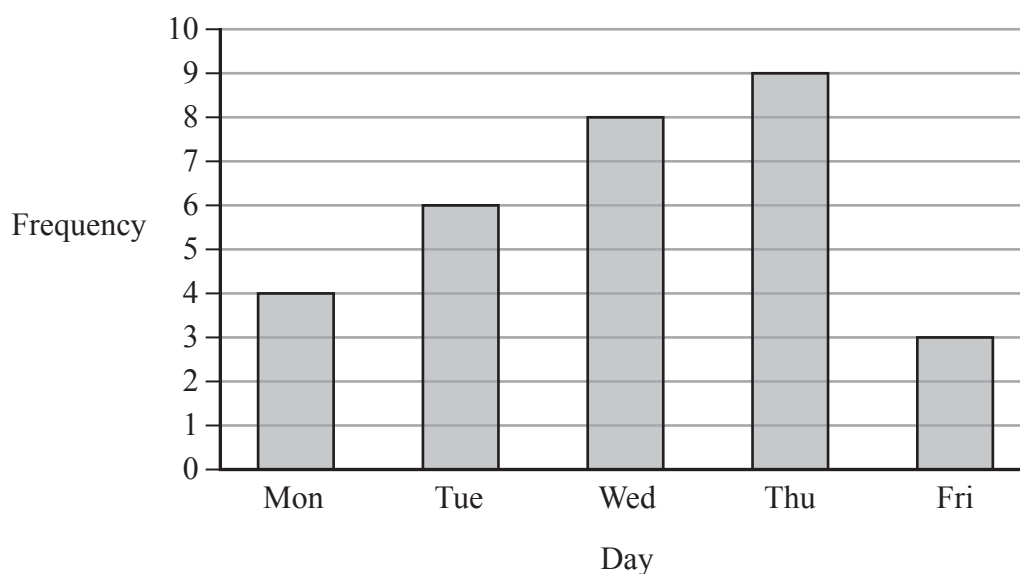
(1)

(Total for Question 1 is 4 marks)



- 2 Lucy works in a school shop.  
She recorded the number of apples sold each day last week.

The bar chart shows this information.



- (a) Write down the number of apples sold on Wednesday.

.....  
(1)

The total number of apples sold last week is twice the total number of apples sold on two of the days.

- (b) Which two days?

..... and .....  
(2)

**(Total for Question 2 is 3 marks)**

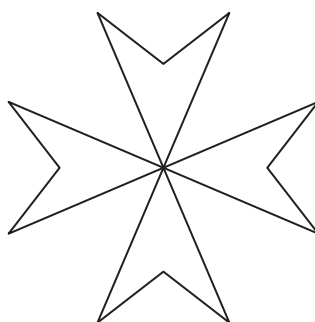
3 Here is a parallelogram.



(a) Write down the order of rotational symmetry of this parallelogram.

.....  
(1)

Here is a shape.



(b) Draw all the lines of symmetry on this shape.

(2)

(Total for Question 3 is 3 marks)



- 4 The table gives information about the cost of calls and the cost of texts for each of two mobile phone networks.

	<b>Telcom</b>	<b>Swish</b>
<b>Calls (per minute)</b>	8p	3p
<b>Texts (each)</b>	4p	2p

Last week Amir

made 30 minutes of calls  
and sent 40 texts

Amir used the Telcom network.

If Amir had used the Swish network, the total cost of his calls and texts would have been less.

How much less?

£ .....

(Total for Question 4 is 3 marks)

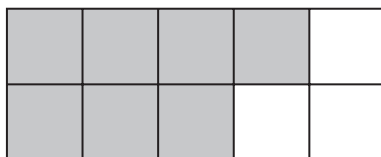
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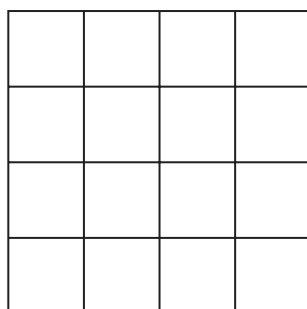


(a) What fraction of the shape above is shaded?

.....  
(1)

(b) Shade  $\frac{3}{4}$  of this shape.

(1)



Jack has 80 marbles.

He gives  $\frac{1}{5}$  of the marbles to his friends.

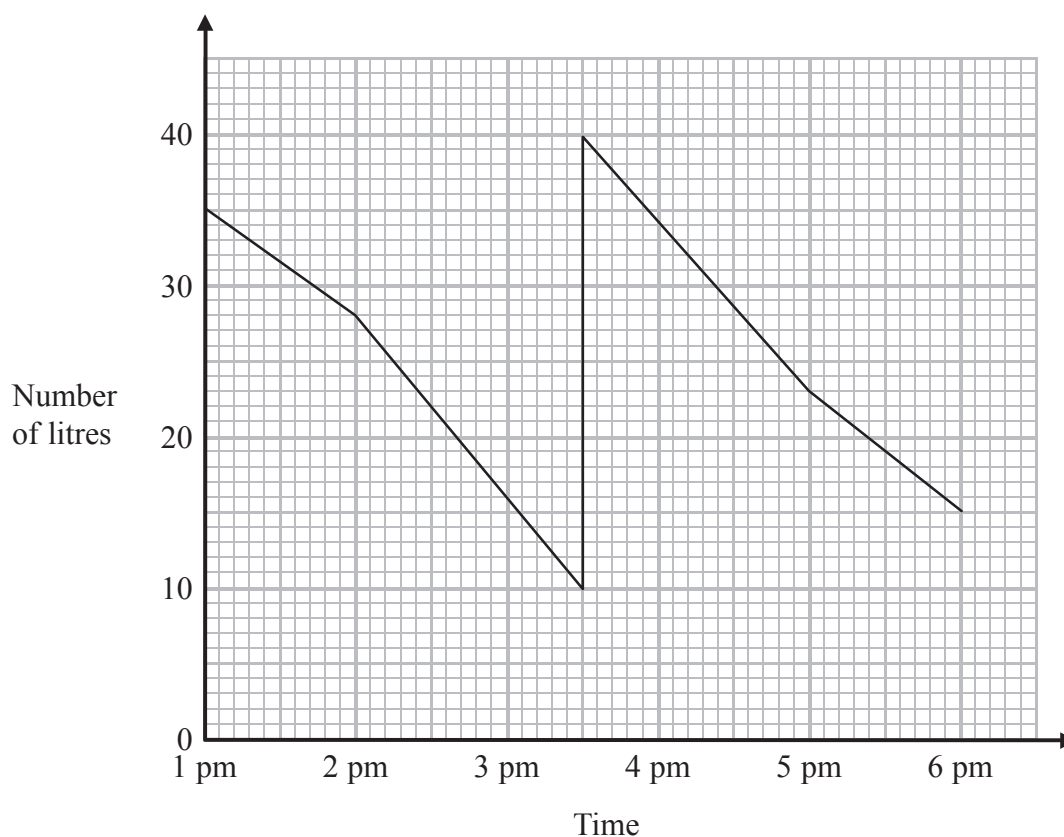
(c) Work out how many marbles Jack now has.

.....  
(3)

(Total for Question 5 is 5 marks)



- 6 The graph gives information about the number of litres of petrol in the tank of Jim's car during a journey.



- (a) How many litres of petrol were in the tank at 1 pm?

..... litres  
(1)

At 3 30 pm Jim stopped and put some petrol into the tank.

- (b) How many litres of petrol did Jim put into the tank?

..... litres  
(1)

- (c) Work out the total number of litres of petrol the car used between 1 pm and 6 pm.

..... litres  
(2)

(Total for Question 6 is 4 marks)



- 7 Megan buys a frozen turkey.  
She is going to defrost the turkey using these instructions.

**Defrosting instructions**

Allow 2 hours for each 450 g

The turkey weighs 5.4 kg.

- (a) Work out how many hours it will take to defrost the turkey.

..... hours  
(3)

Megan uses these instructions to cook the turkey.

1. Cook for 20 minutes per kg.
2. Cook for another 90 minutes.
3. Take out of oven.
4. Leave for 30 minutes.

The turkey will then be ready to eat.

The turkey weighs 5.4 kg.

Megan says,

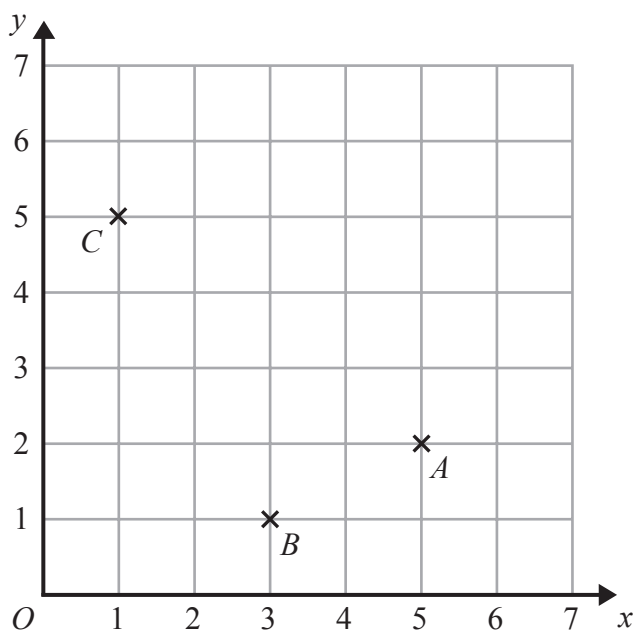
“I will start to cook the turkey at 2 30 pm.  
It will be ready to eat at 6 pm.”

- \*(b) Is Megan correct?  
You must show how you get your answer.

(4)

(Total for Question 7 is 7 marks)





- (a) Write down the coordinates of point  $C$ .

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

- (b) On the grid, mark with a cross ( $\times$ ) the point  $D$  so that  $ABCD$  is a rectangle.  
Label this point  $D$ .

(1)

(Total for Question 8 is 2 marks)

- 9 (a) Find the value of  $\sqrt{7.29}$

.....  
(1)

- (b) Find the value of  $21^3$

.....  
(1)

(Total for Question 9 is 2 marks)



- 10 Steve went on holiday.  
He recorded the number of photos he took each day.

Here are his results.

20    14    21    19    27    31    19    19    24    21

- (a) Find the mode.

.....  
(1)

- (b) Work out the mean.

.....  
(2)

Steve saves his photos on a memory card.

The memory card has 1000 megabytes of memory space.  
Each photo uses 2.4 megabytes of memory space.

Steve has saved 320 photos on the memory card.

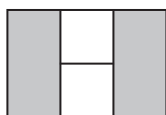
- (c) Work out how many more photos Steve can save on the memory card.

.....  
(3)

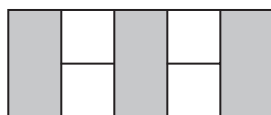
(Total for Question 10 is 6 marks)



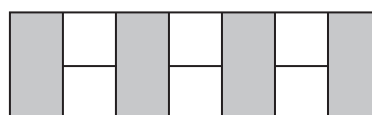
11 Here is a sequence of patterns made with white squares and grey rectangles.



pattern number 1



pattern number 2



pattern number 3

(a) In the space below, draw pattern number 4

(1)

(b) How many grey rectangles are there in pattern number 8?

(1)

Sue says,

“There is a pattern in the sequence with exactly 50 white squares.”

(c) Is Sue right?

You must give a reason for your answer.

(1)

A pattern in the sequence has exactly 20 grey rectangles.

(d) How many white squares does the pattern have?

(1)

(Total for Question 11 is 4 marks)

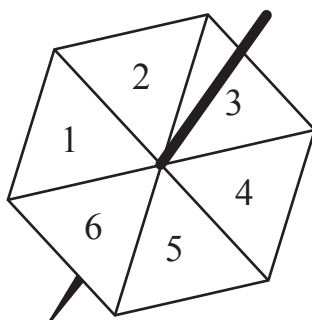


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12 Becky has a fair 6-sided spinner.



Becky will spin the spinner once.

(a) Write down the probability that the spinner will land on the number 4

.....  
(1)

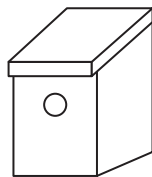
(b) Write down the probability that the spinner will land on a number less than 10

.....  
(1)

(Total for Question 12 is 2 marks)



13 Tina is making a nest box for birds.



Tina has marked the six parts she needs on a piece of wood, as shown in the diagram below.

220 mm	250 mm	200 mm	200 mm	250 mm	150 mm
roof	back	front	side	side	base

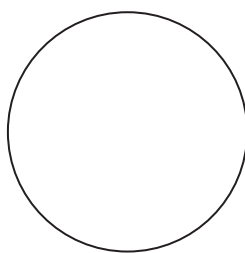
Diagram **NOT**  
accurately drawn

(a) Work out the total length of the six parts.

.....mm  
(2)

Tina is going to cut a circular hole in the front of the nest box.

She makes this accurate full size drawing to represent the hole.



(b) Measure the diameter of the hole.

.....  
(1)



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Here is a sketch of one side of the nest box.

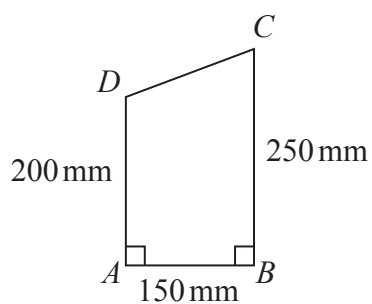


Diagram **NOT**  
accurately drawn

- (c) In the space below, make an accurate scale drawing of this side of the nest box.  
Use a scale of 1 cm to 20 mm.  
The line  $AB$  has been drawn for you.

$A$  —————  $B$

(3)

(Total for Question 13 is 6 marks)



P 4 9 3 0 3 R A 0 1 5 2 8

14 (a) Simplify  $m + m + m + m + m$

(1)

(b) Simplify  $p \times r \times 4$

(1)

(c) Simplify  $5x + 4y + 2x - y$

(2)

(Total for Question 14 is 4 marks)

15

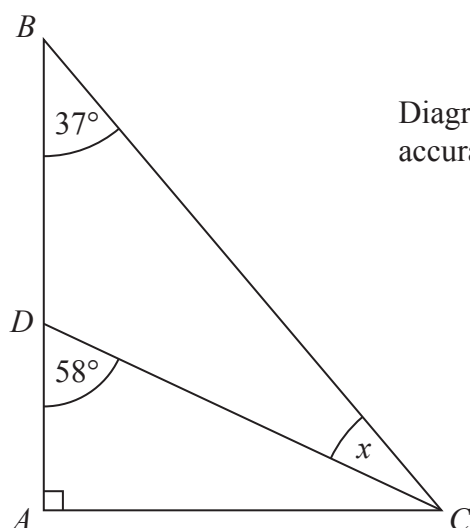


Diagram NOT  
accurately drawn

$ABC$  is a right-angled triangle.

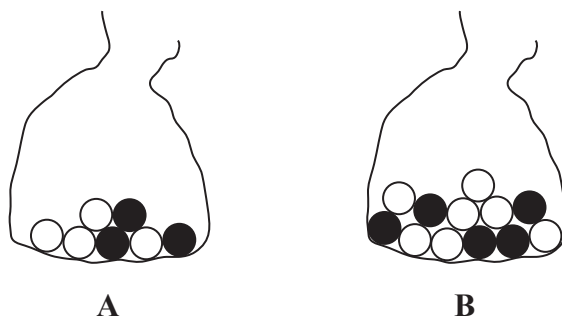
$ADB$  is a straight line.

Work out the size of the angle marked  $x$ .

(Total for Question 15 is 2 marks)



- \*16 There are only black balls and white balls in bag **A** and in bag **B**, as shown in the diagram.



Heidi is going to take at random a ball from bag **A** and a ball from bag **B**.

Which bag gives Heidi the greater probability of taking a black ball, bag **A** or bag **B**?  
You must show how you get your answer.

(Total for Question 16 is 3 marks)



**17** 148 students each choose to study Geography or to study History.

72 of the students choose History.

34 boys choose Geography.

28 girls choose History.

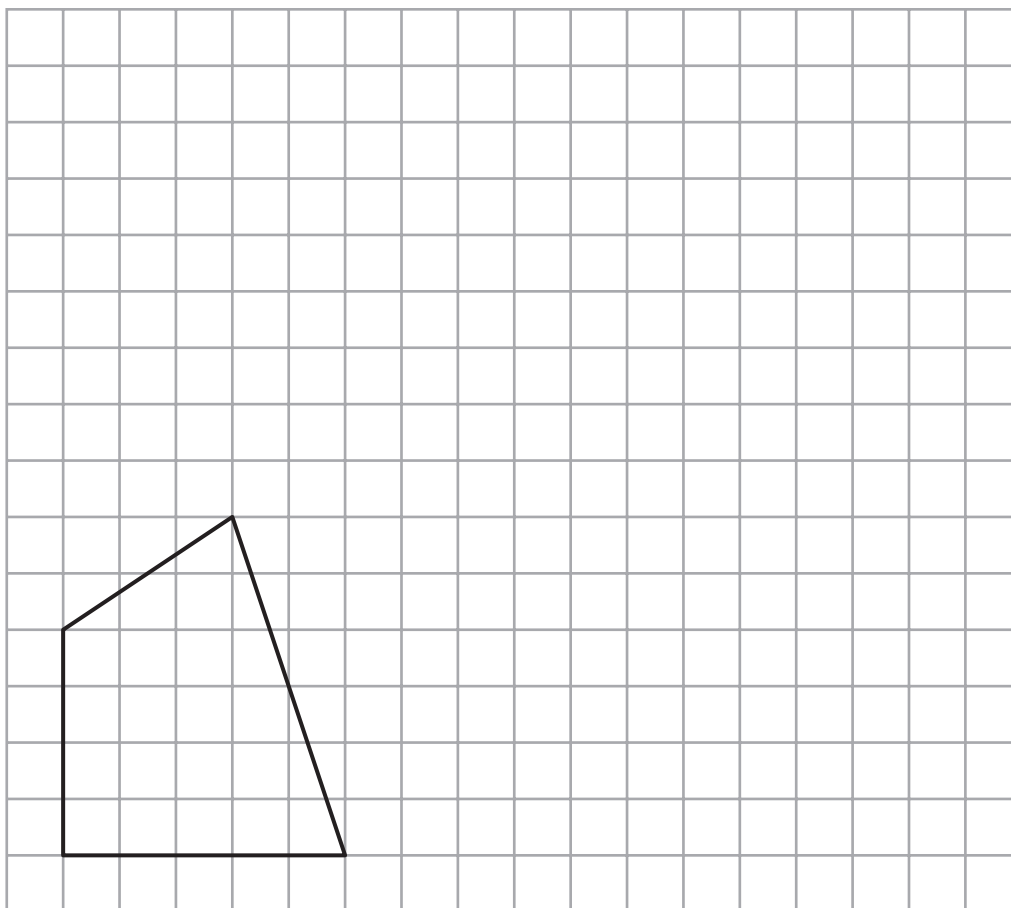
Use this information to complete the two-way table.

	Geography	History	Total
Boys			
Girls			
Total			

(Total for Question 17 is 3 marks)



18



On the grid, draw an enlargement of the shape with a scale factor of 2

(Total for Question 18 is 2 marks)



19 James has some square paving stones and some rectangular paving stones.

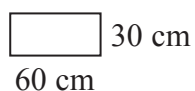
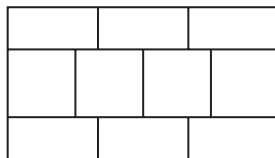


Diagram **NOT**  
accurately drawn

He uses four square paving stones and six rectangular paving stones to make this pattern in the shape of a rectangle.



Each rectangular paving stone is 60 cm by 30 cm.

(a) Work out the length of one side of a square paving stone.

..... cm  
(2)

Sally is going to make a path with rectangular paving stones.  
Each paving stone is 60 cm by 30 cm.

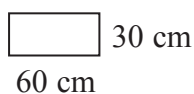
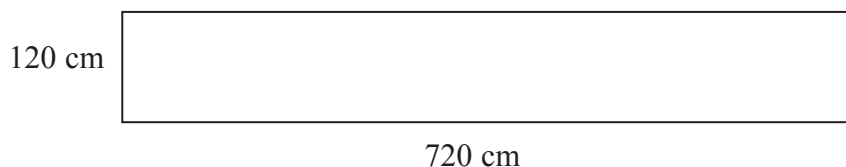


Diagram **NOT**  
accurately drawn

The path will be 720 cm long and 120 cm wide.



(b) Work out how many paving stones Sally needs to make the path.

.....  
(3)

(Total for Question 19 is 5 marks)



20 Chloe recorded the test marks of 20 students.

The stem and leaf diagram shows this information.

1	5 7 8 9
2	0 0 3 7 8
3	1 4 5 6 8 9
4	1 2 2 6 7

Key:

1 | 5 means 15 marks

(a) Find the median mark.

(2)

(b) Work out the range of the marks.

(2)

The pass mark for the test is 25

(c) How many of the 20 students did **not** pass the test?

(1)

(Total for Question 20 is 5 marks)



21 The diagram shows a rectangle.

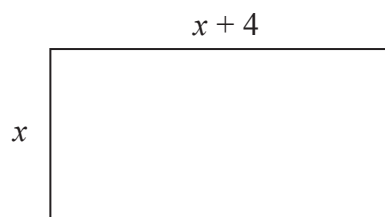


Diagram **NOT**  
accurately drawn

All measurements are given in centimetres.

The perimeter of the rectangle is 45 cm.

Work out the value of  $x$ .

$x =$  .....

(Total for Question 21 is 3 marks)

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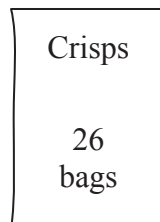
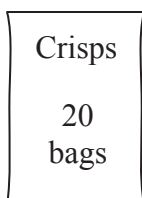
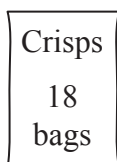
**\*22** A shop sells bags of crisps in different size packs.

There are

18 bags of crisps in a small pack

20 bags of crisps in a medium pack

26 bags of crisps in a large pack



Which size pack is the best value for money?

You must show all your working.

(Total for Question 22 is 4 marks)



- 23 The body mass index,  $B$ , for a person of mass  $m$  kg and height  $h$  metres is given by the formula

$$B = \frac{m}{h^2}$$

Usman has a mass of 50 kg.

He has a height of 1.57 m.

- (a) Work out Usman's body mass index.  
Give your answer correct to one decimal place.

.....  
(2)

Tom's height is 1.80 m.

He wants his body mass index to be 21

- (b) Work out the mass that will give Tom a body mass index of 21

..... kg  
(2)

Tom is a ski jumper.

The maximum length of skis he can use is 145% of his height.

Tom's height is 1.80 m.

- (c) Work out the maximum length of skis Tom can use.

..... m  
(3)

(Total for Question 23 is 7 marks)



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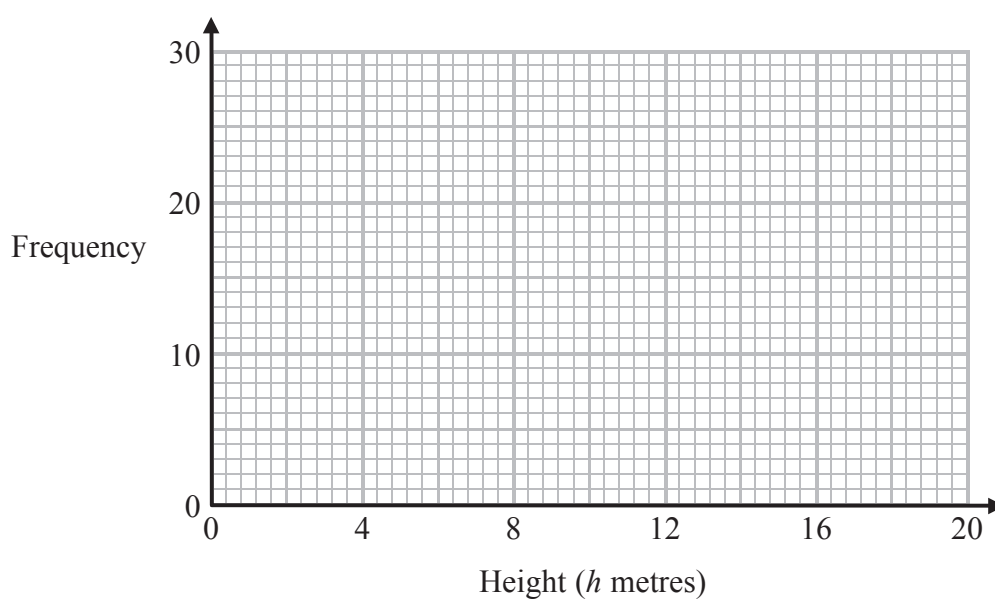
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24 The table shows information about the heights of 50 trees.

Height ( $h$ metres)	Frequency
$0 < h \leq 4$	8
$4 < h \leq 8$	21
$8 < h \leq 12$	12
$12 < h \leq 16$	7
$16 < h \leq 20$	2

Draw a frequency polygon for the information in the table.



(Total for Question 24 is 2 marks)



\*25

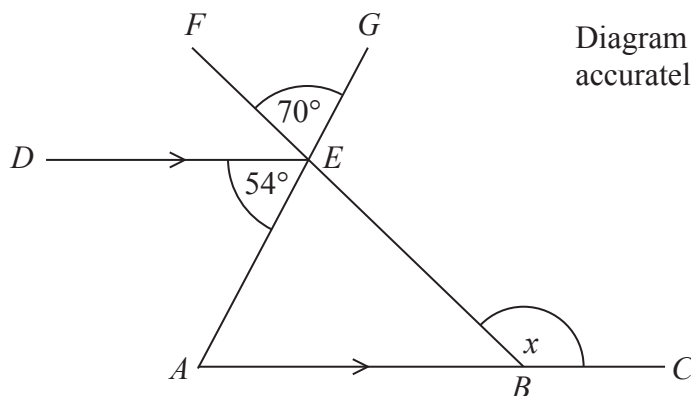


Diagram **NOT**  
accurately drawn

$ABC$  and  $DE$  are parallel lines.  
 $AEG$  and  $BEF$  are straight lines.

Angle  $AED = 54^\circ$

Angle  $FEG = 70^\circ$

Work out the size of the angle marked  $x$ .  
Give a reason for each stage of your working.

(Total for Question 25 is 4 marks)



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**26** Colin works on 5 days each week.  
Each day he drives from his home to work and from work to his home.

Colin pays £3.50 each day to use the car park at work.

The distance from Colin's home to work is 18 miles.  
Colin's car uses one gallon of petrol every 45.2 miles.

1 litre of petrol costs 136.9p

1 gallon = 4.546 litres

Work out the total cost for Colin to use his car for work each week.  
You must show all your working.

£ .....

(Total for Question 26 is 5 marks)

**TOTAL FOR PAPER IS 100 MARKS**



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