

Surname
Other Names

Centre Number

Candidate Number
0



GCSE

185/12

MATHEMATICS

WALES PILOT

FOUNDATION TIER

PAPER 2

A.M. THURSDAY, 17 November 2011

2 hours

ADDITIONAL MATERIALS

A calculator will be required for this paper.

INSTRUCTIONS TO CANDIDATES

Use black ink or black ball-point pen.

Write your name, centre number and candidate number in the spaces at the top of this page.

Answer **all** the questions in the spaces provided.

Take π as 3.14 or use the π button on your calculator.

INFORMATION FOR CANDIDATES

You should give details of your method of solution when appropriate.

Unless stated, diagrams are not drawn to scale.

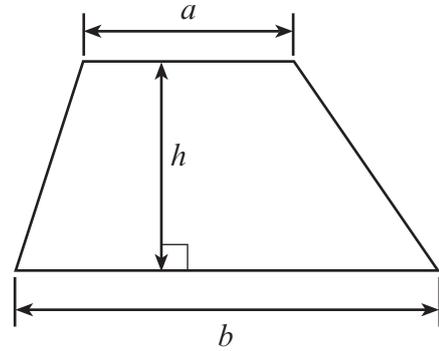
Scale drawing solutions will not be acceptable where you are asked to calculate.

The number of marks is given in brackets at the end of each question or part-question.

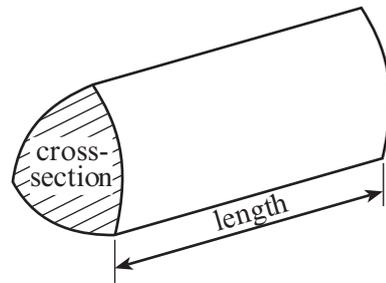
For Examiner's use only		
Question	Maximum Mark	Mark Awarded
1	11	
2	3	
3	3	
4	7	
5	4	
6	4	
7	3	
8	4	
9	5	
10	4	
11	8	
12	5	
13	3	
14	6	
15	6	
16	7	
17	8	
18	4	
19	5	
TOTAL MARK		

Formula List

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



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



1. (a) (i) Janet buys some items for her office. Complete her bill.

Item	Cost
Computer desk	£ 85.60
6 box files @ £2.80 each	£
4 packets of paper @ £6.57 per packet	£
12 assorted colour pens @ 86p each	£
Total	£

[4]

- (ii) Janet receives a discount of 5%.
How much is the discount on this bill?

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[2]

- (b) A group of five pupils go to see a play.
The tickets cost £6.75 each.
They pay for the tickets with a £50 note.
How much change should they receive?

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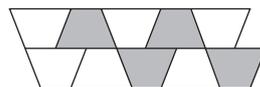
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[3]

- (c) (i) What percentage of the pattern is shaded?



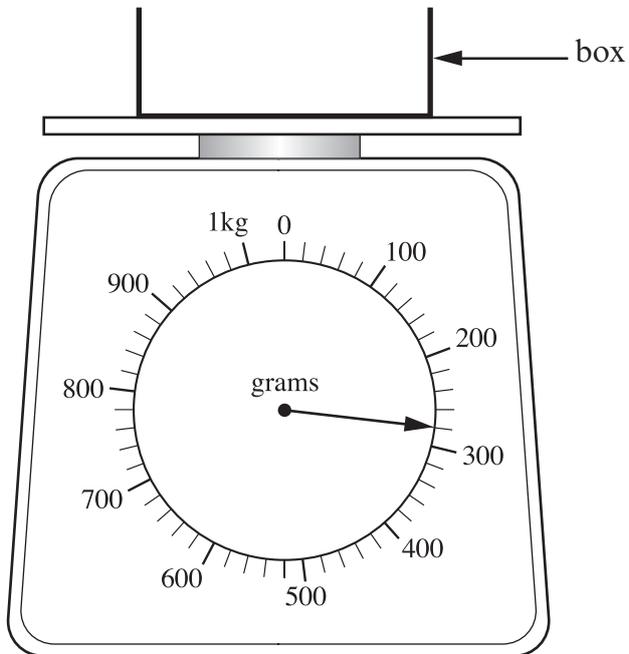
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- (ii) What percentage of the pattern is NOT shaded?

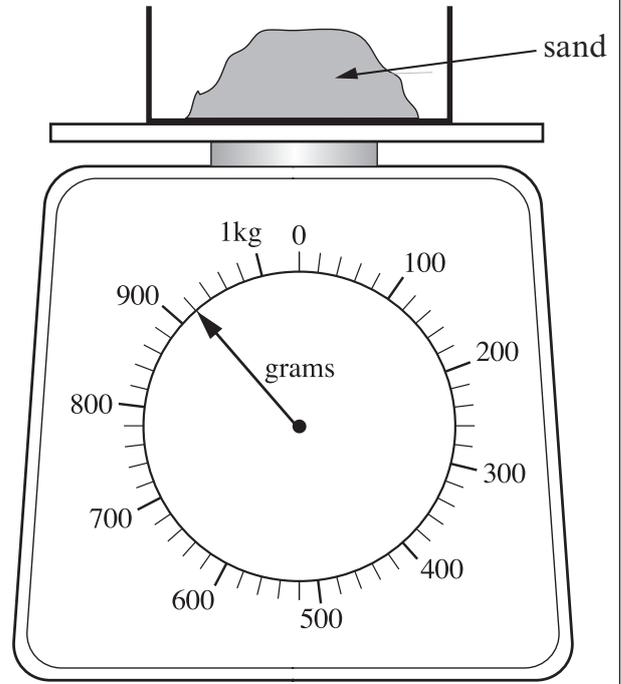
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[2]

2. A box is placed on a scale.



- Sand is poured into the box.



Find how much the sand weighs.

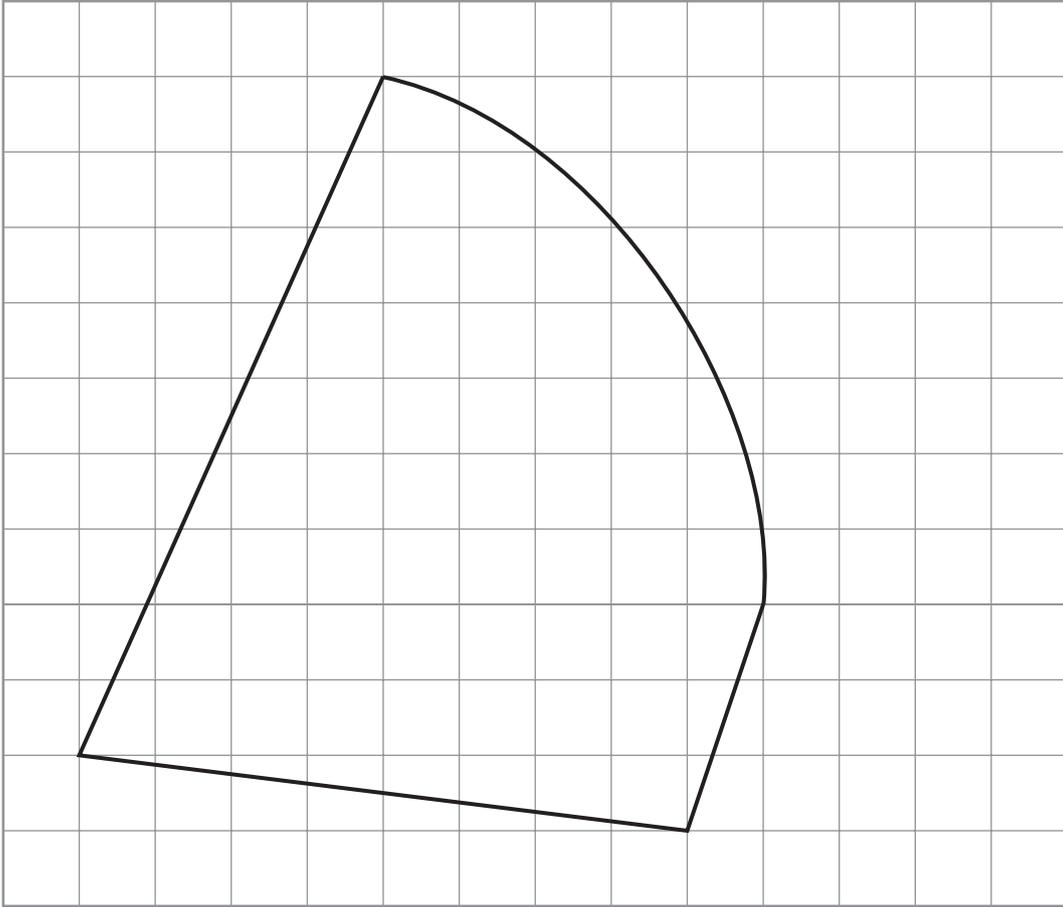
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[3]

3.



The above shape is drawn on a square grid.
By counting squares, estimate the area of the shape if each square represents an area of 5 cm^2 .

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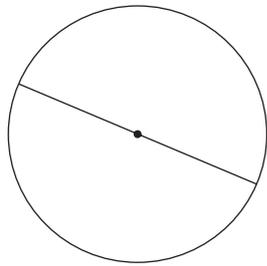
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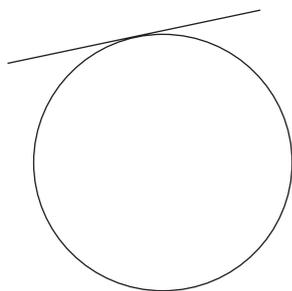
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[3]

4. (a) Write down the special name of the straight line shown in each diagram below.



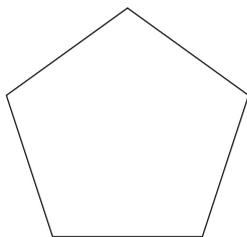
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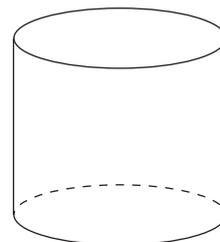
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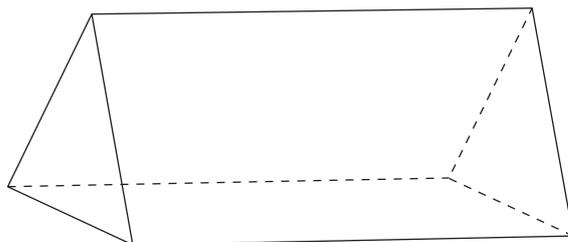
(b) Write down the name of each of the shapes shown below.



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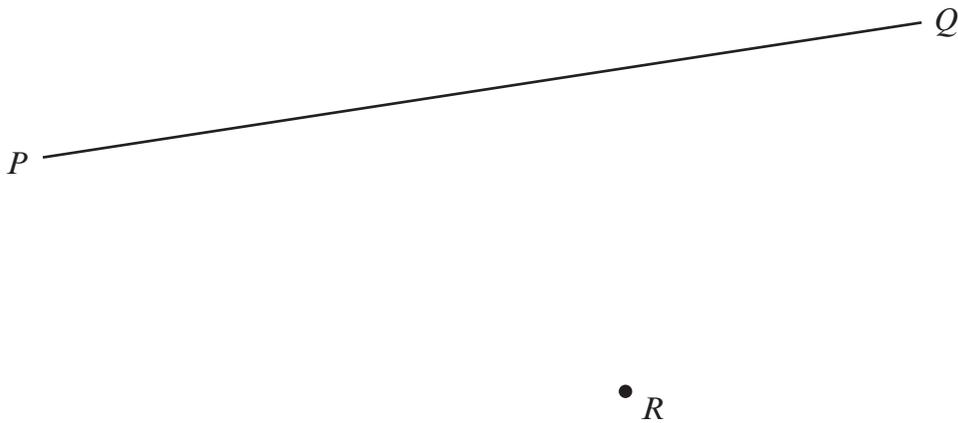


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[3]

- (c) (i) Measure, in centimetres, the length of the line PQ .

Length of PQ = cm



- (ii) Draw a line perpendicular to PQ that passes through R .

[2]

5. A list of numbers is made by using the formula

$$\text{Value of the Number} = 5 \times \text{Position of the Number} + 6$$

- (a) Find the **Value of the Number** when the **Position of the Number** is 9.

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[2]

- (b) Find the **Position of the Number** when the **Value of the Number** is 121.

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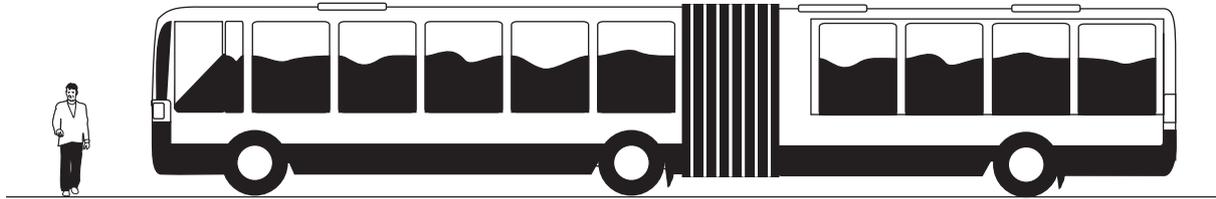
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[2]

6. The picture shows a 'bendy bus' with a man standing beside it.



Showing all your working, estimate the actual length of the bendy bus.

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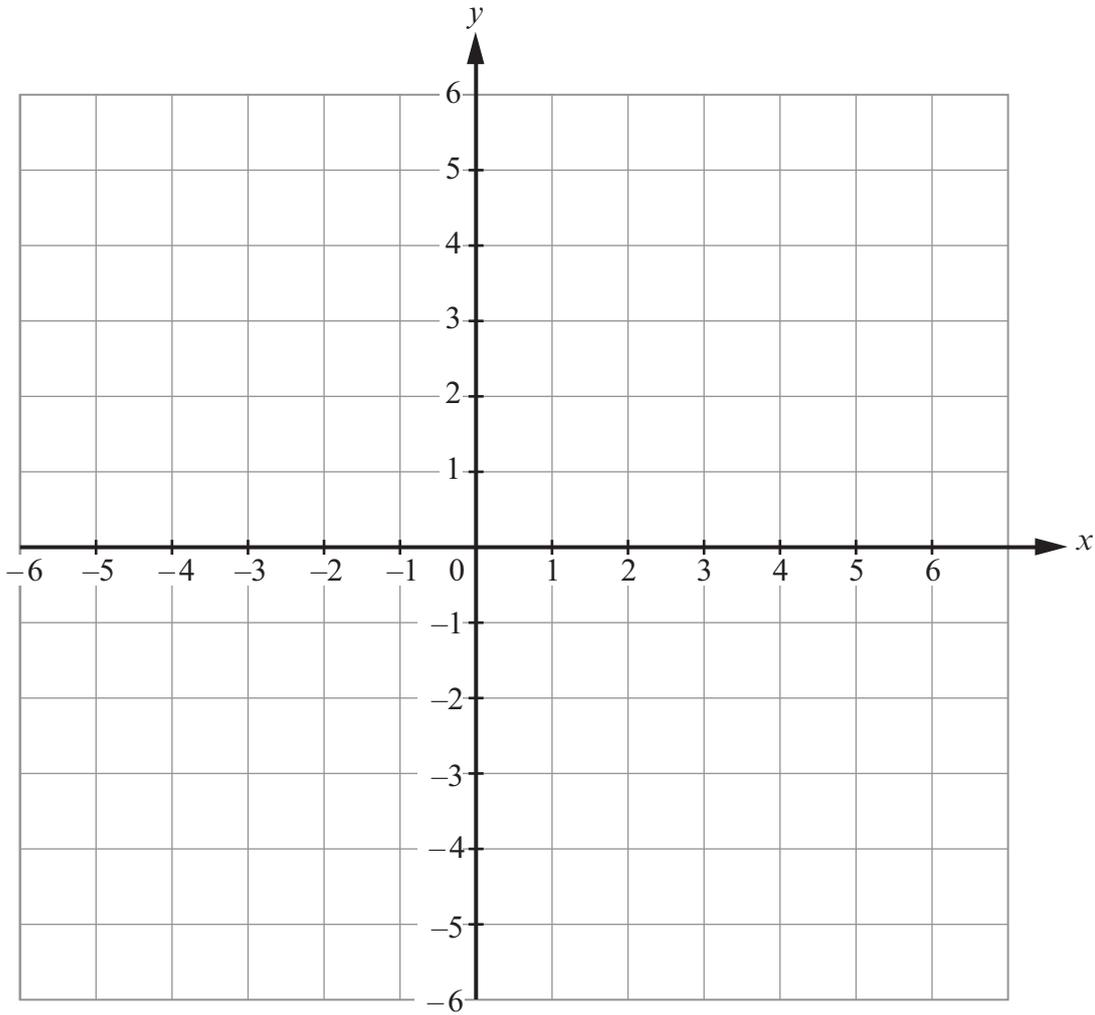
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[4]

7. On the squared paper below, plot and label the points $A(-3, 5)$, $B(5, -2)$ and $C(-4, -5)$.

[3]



8. Bryn hires a floor sander.
 It costs £37 for the first day and £18.50 for each additional day.
 Bryn's total cost for hiring the sander was £129.50.
 For how many days did he hire the sander?

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[4]

9. (a) (i) Geoff is t cm tall.
 Jill is 6 cm taller than Geoff.
 Write down, in terms of t , Jill's height.

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- (ii) Concrete blocks each weigh w kg.
 Write down, in terms of w , the weight of 10 blocks.

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- (iii) Mary is x years old.
 Write down, in terms of x , her age 5 years ago.

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[3]

- (b) Use the formula $V = U + 10T$ to find the value of V when $U = 20$ and $T = 9$.

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[2]

10. (a) Hywel and Janet go on holiday to the USA.
 They change £1300 into dollars (\$) when the exchange rate was £1 = \$1.55.
 How many dollars did they get?

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[2]

- (b) On their return they have \$363 left over.
 They change this back into pounds when the rate of exchange is £1 = \$1.65.
 How much do they get in pounds?

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[2]

11. The ages (in years) of the 8 members of a team are as follows:

23 27 45 24 33 34 21 41

(a) Find the median of the ages of the members of the team.

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[2]

(b) Find the range of the ages of the members of the team.

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[1]

(c) (i) Find the mean age of the members of the team.

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(ii) One evening a member of the team did not turn up.
The mean age of those that were present was 29.
What was the age of the member who did not turn up?

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[5]

12. (a) Simplify $4x + 3 + 6x - 7$.

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[2]

(b) (i) Complete the following table, giving values of $y = 5x + 1$, for values of x between -1 and 2.

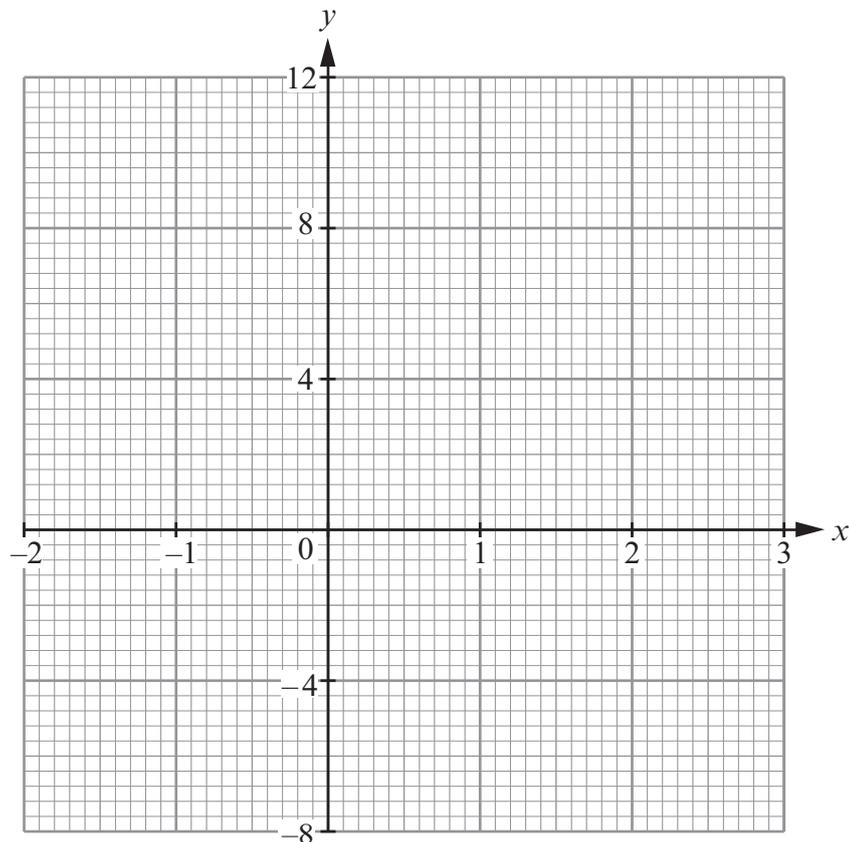
x	-1	0	1	2
$y = 5x + 1$	-4	1		11

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(ii) Draw the graph of $y = 5x + 1$ on the graph paper below.

[3]



13. The sum of seven, single digit positive whole numbers is 17.
Six of the numbers are equal.
What is the other number?

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[3]

14. Five identical rectangles fit together as shown.
What is the total area which they cover?
Write down the units of your answer.

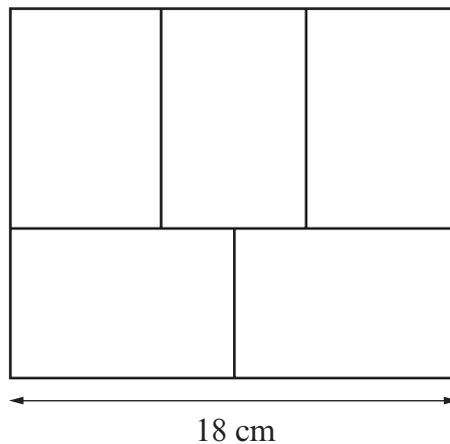


Diagram not drawn to scale

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[6]

15. (a) Solve the equation $4(6x - 7) = 32$.

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(b) Solve $4x - 7 < 5$.

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[2]

(c) Simplify $m^3 \times m^4$.

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[1]

16. The number of beans in each of 200 packets were counted.
The table below shows a summary of the results.

Number of beans per packet	Number of packets
20 to 38	30
39 to 57	42
58 to 76	50
77 to 95	78

- (a) One of the packets is selected at random.
What is the probability that it contains

- (i) 20 to 38 beans,

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- (ii) 58 to 95 beans?

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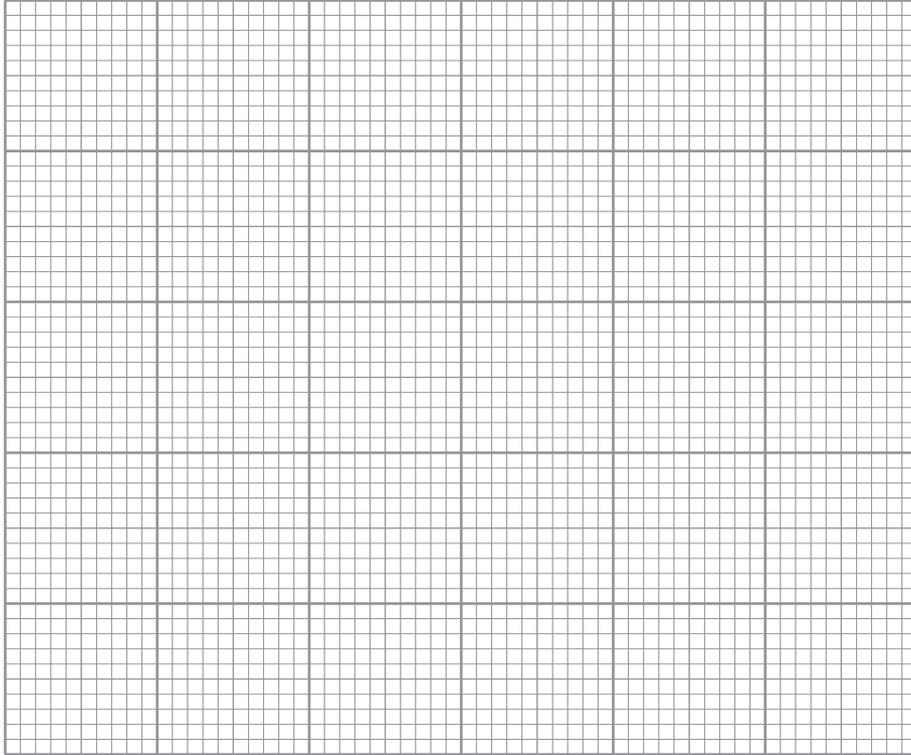
[3]

- (b) Which is the modal group for the number of beans per packet?

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[1]

- (c) On the graph paper below, draw a grouped frequency polygon to show the distribution of the number of beans in a packet.



[3]

- (b) Mrs Ridgley finds out later on, that VAT at 5% is payable on the cost of the standing charge and the units used.
Would this affect her decision? You must give a reason for your answer.

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[1]

18. Aaron bought a bike for £600 on 1st February 2010.
Every year the value of the bike depreciates by 12% of its value at the start of the year.
Find the value of the bike on 1st February 2012.

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[4]

19. A circular photograph is placed in a square frame as shown in the diagram.

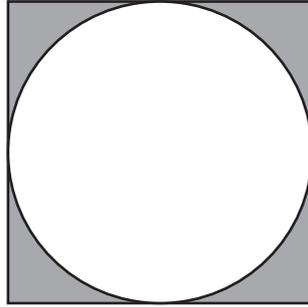


Diagram not drawn to scale

The diameter of the circular photograph is 8 cm.
Calculate the shaded area.

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