

**OXFORD CAMBRIDGE AND RSA EXAMINATIONS
GCSE**

J567/02

MATHEMATICS B

Paper 2

(Foundation Tier)

MONDAY 4 MARCH 2013:

Morning

**DURATION: 1 hour 30 minutes
plus your additional time allowance**

MODIFIED ENLARGED 24pt

Candidate forename		Candidate surname	
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Centre number						Candidate number				
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Candidates answer on the Question Paper

OCR SUPPLIED MATERIALS:

Insert for Question 18

OTHER MATERIALS REQUIRED:

Geometrical instruments

Tracing paper (optional)

Scientific or graphical calculator

<p>You are permitted to use a calculator for this paper.</p>

READ INSTRUCTIONS OVERLEAF

This paper has been pre modified for carrier language

INSTRUCTIONS TO CANDIDATES

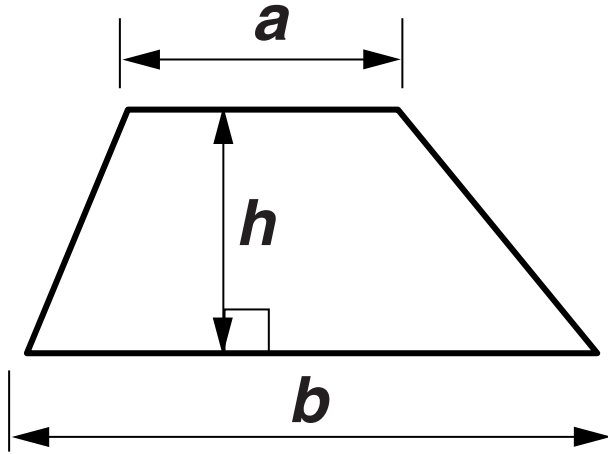
- **Write your name, centre number and candidate number in the boxes on the first page. Please write clearly and in capital letters.**
- **Use black ink. HB pencil may be used for graphs and diagrams only.**
- **Answer ALL the questions.**
- **Read each question carefully. Make sure you know what you have to do before starting your answer.**
- **Your answers should be supported with appropriate working. Marks may be given for a correct method even if the answer is incorrect.**
- **Write your answer to each question in the space provided. Additional paper may be used if necessary but you must clearly show your candidate number, centre number and question number(s).**

INFORMATION FOR CANDIDATES

- **The number of marks is given in brackets [] at the end of each question or part question.**
- **Use the π button on your calculator or take π to be 3.142 unless the question says otherwise.**
- **Your Quality of Written Communication is assessed in questions marked with an asterisk (*).**
- **The total number of marks for this paper is 100.**

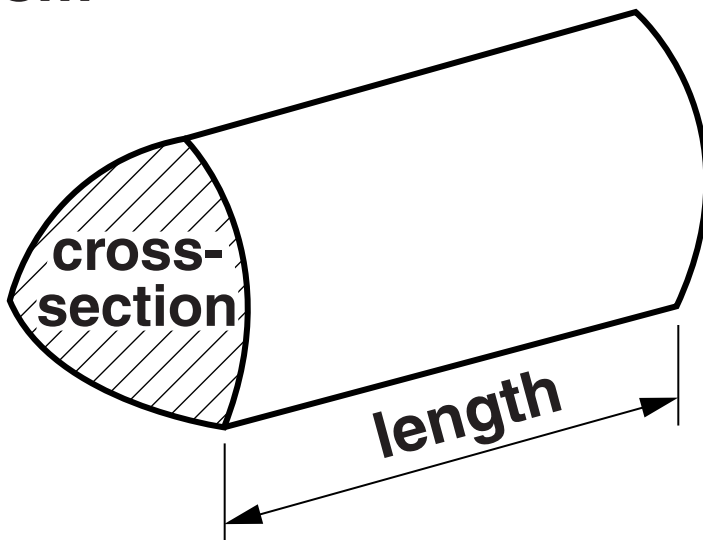
FORMULAE SHEET: FOUNDATION TIER

Trapezium



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

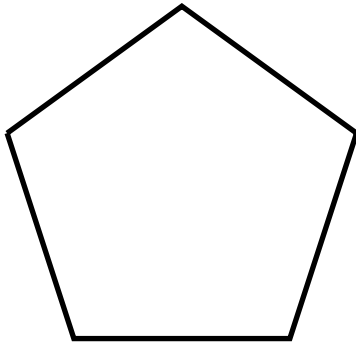
Prism



$$\begin{aligned} \text{Volume of prism} \\ = (\text{area of cross-section}) \times \text{length} \end{aligned}$$

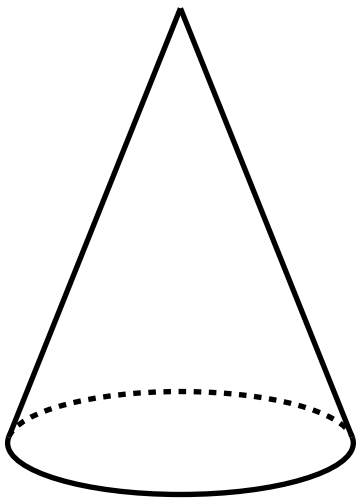
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- 1 (a) Write down the mathematical name of the following shape.**



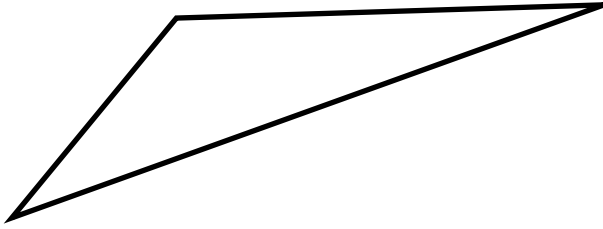
(a) _____ **[1]**

- (b) Write down the mathematical name of the following solid.**



(b) _____ **[1]**

(c) Write down the mathematical name of the following type of triangle.



(c) _____ **[1]**

2 Here is a list of five words.

certain
impossible
likely
unlikely
evens

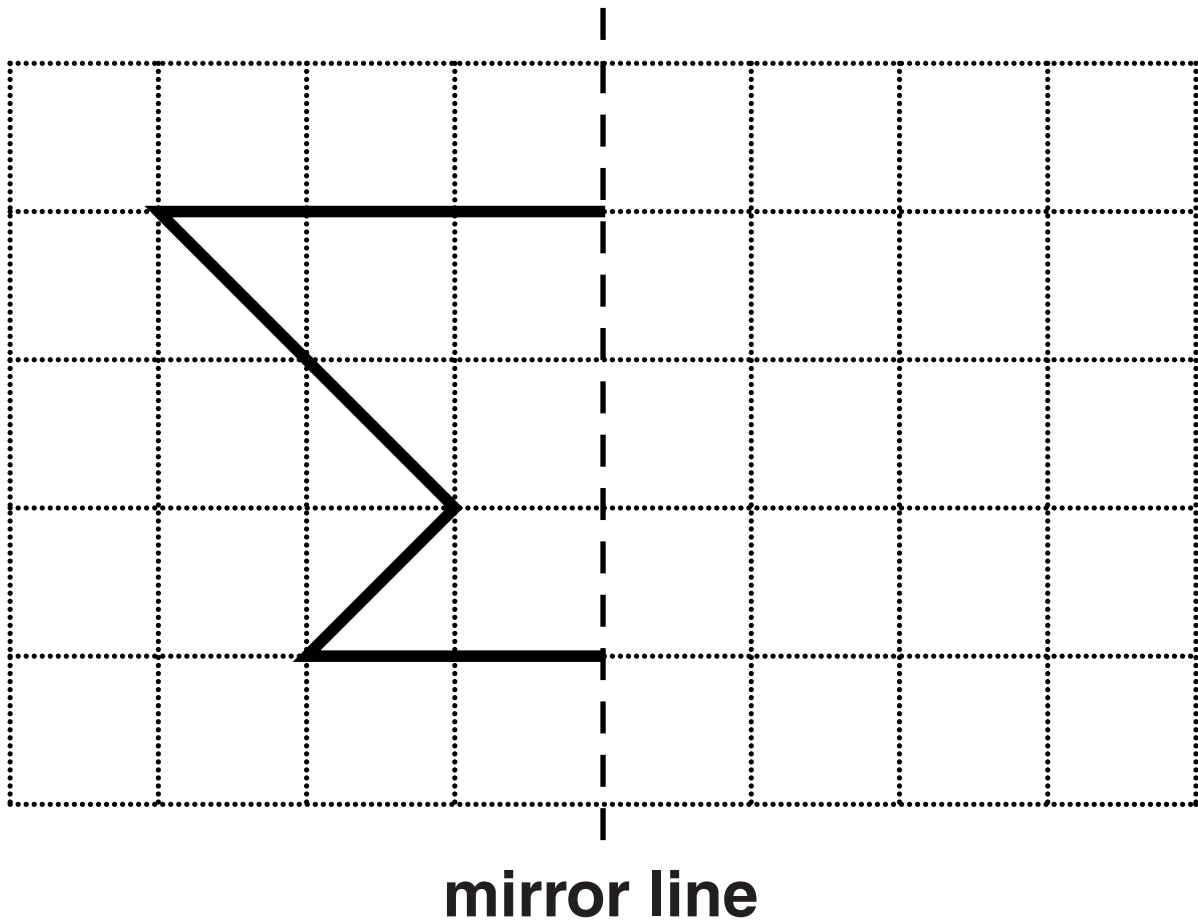
**Choose a word from the list above
to complete each of the following
sentences.**

When a normal fair dice is rolled it is

**(a) _____ that it will
show an odd number. [1]**

**(b) _____ that it will
show a number less than 7. [1]**

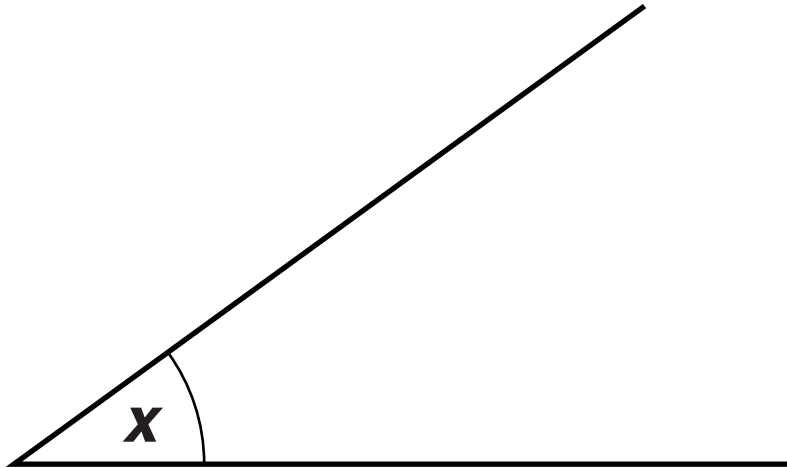
- 3 The diagram below shows a shape on a grid with a mirror line. Draw the reflection of the shape in the mirror line.**



[2]

4 This question is about angles.

(a) The following diagram shows angle x .



(i) Measure angle x .

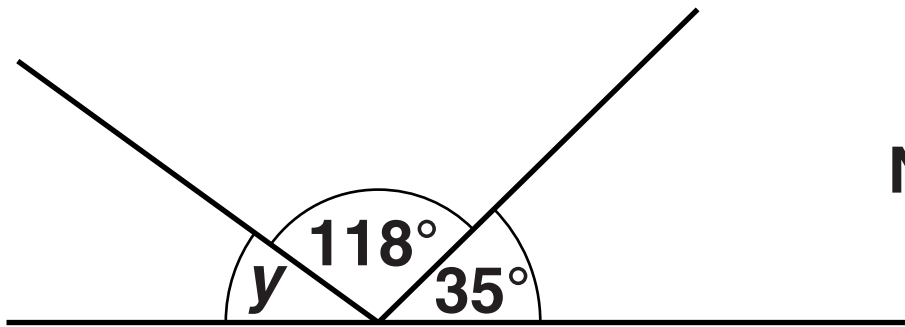
(a)(i) _____[°] [1]

(ii) What is the mathematical name of this type of angle?

(ii) _____ [1]

(b) Complete these sentences.

(i)



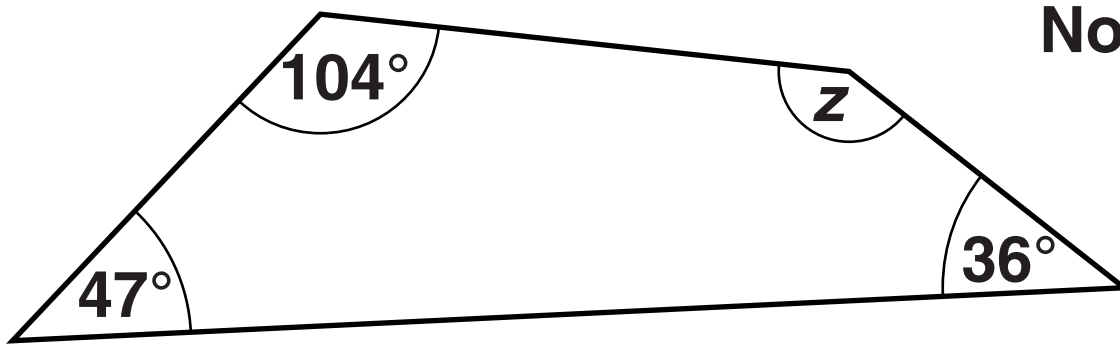
Not to scale

Angle y is _____ $^\circ$

because _____

_____ . [2]

(ii) Look at the following diagram.



Not to scale

Angle z is _____ $^\circ$

because _____

_____. [2]

5 (a) Work out.

(i) the cube of 4

(a)(i)_____ [1]

(ii) $\sqrt{361}$

(ii)_____ [1]

(b) Complete the power of 8 by writing the missing number in the box.

$8 \times 8 \times 8 \times 8 = 8^{\boxed{}}$ [1]

(c) Calculate.

(i) $5^3 + 17^2$

(c)(i)_____ [2]

(ii) $(5 + 18) \times 9 - 14$

(ii)_____ [1]

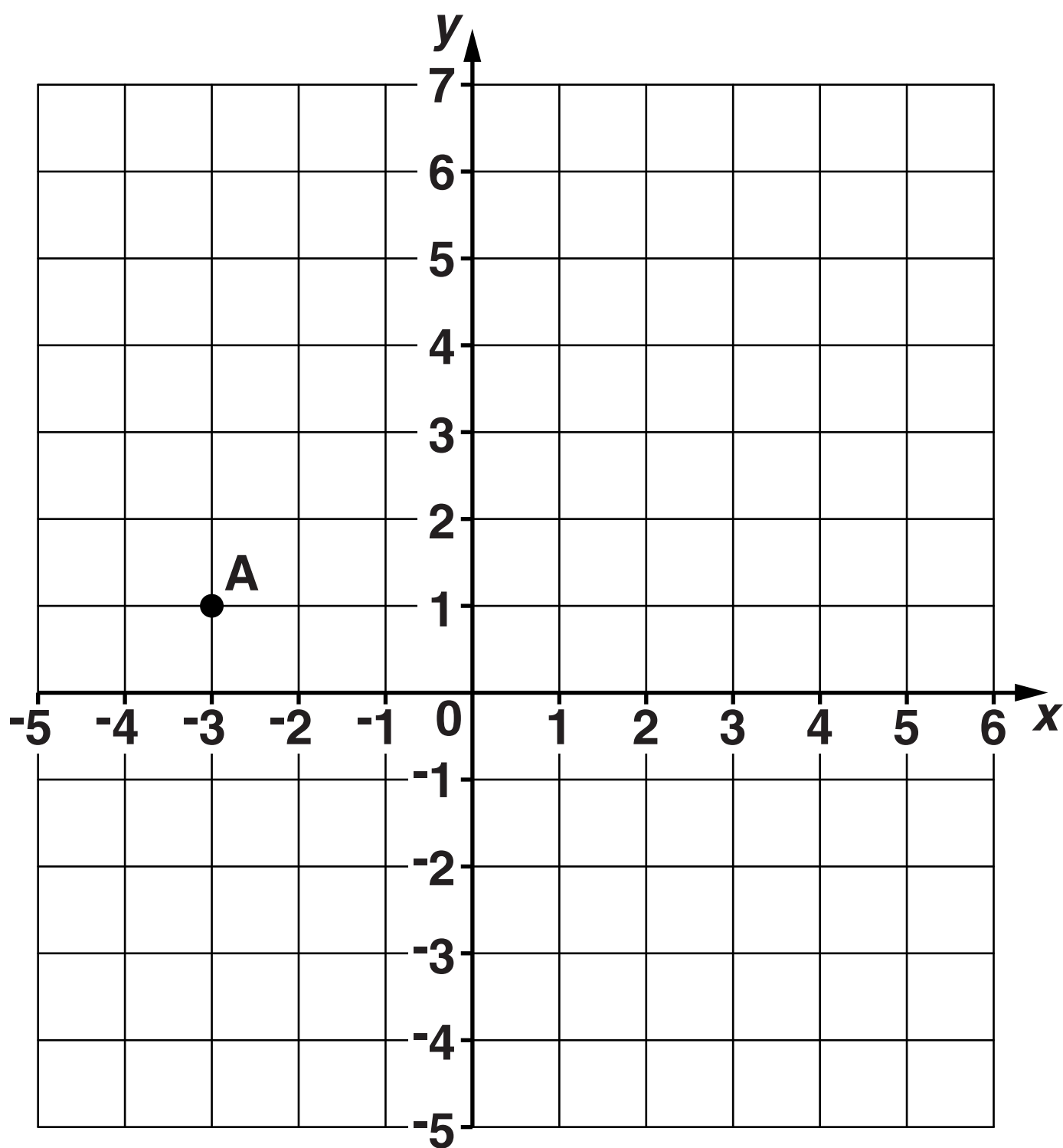
(d) Write the following in order of size, starting with the smallest.

9.75 9.705 9.057 9.507 9.07

(d) _____
smallest

_____ **[2]**

6 Here is a grid.



(a) Write down the coordinates of point A.

(a) (_____ , _____) [1]

**(b) Plot the point (4, -2).
Label it B.**

[1]

7 Solve.

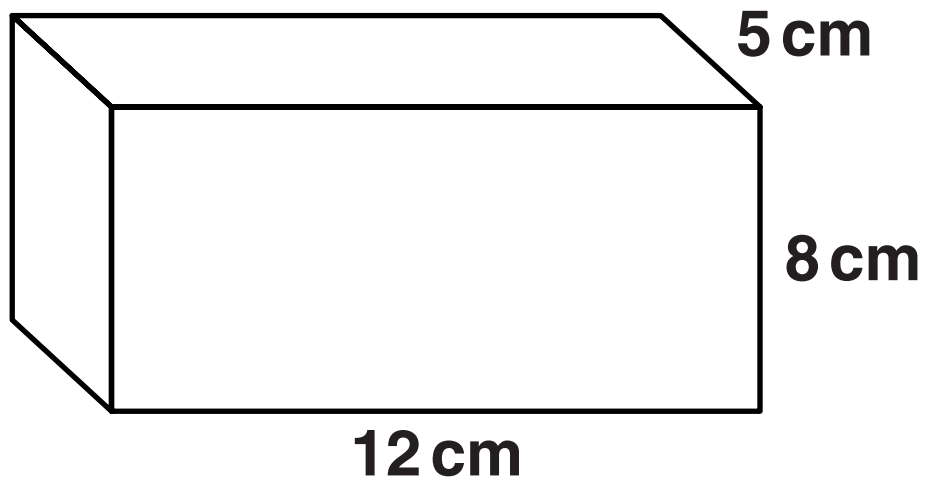
(a) $6x + 2 = 29$

(a) $x =$ _____ [2]

(b) $\frac{8y}{3} = 24$

(b) $y =$ _____ [2]

- 8 Calculate the volume of the cuboid below.



_____ cm^3 [2]

- 9 (a) Here are some ingredients for Pork and Leek Casserole.**

**Pork and Leek Casserole
Serves 6 people**

**600 g pork
2 onions
3 leeks
50 g margarine
120 g flour**

- (i) Jamie is making the casserole to serve 12 people.**

How much pork should he use?

(a)(i) _____ g [1]

(ii) Heidi is making the casserole for 3 people.

How many onions should she use?

(ii)_____ [1]

(iii) Pierre is making the casserole for 4 people.

How much flour should he use?

(iii)_____ g [2]

(b) Jamie also uses 1.4 litres of milk.

How many millilitres of milk does he use?

(b)_____ ml [1]

10 Sasha won a prize of £900 in a competition.

She gave $\frac{1}{6}$ of the prize to John and she spent 12% of the prize.

Calculate how much money Sasha has left.

£ _____ [4]

- 11 (a) This formula gives the total cost of some items bought from a cake shop.**

**Total cost in pence =
36 × number of cupcakes
+ 31 × number of scones**

- (i) Sarah buys 1 cupcake and 2 scones.**

What is the total cost of Sarah's shopping?

(a)(i)_____ p [1]

(ii) Colin buys 8 cupcakes and 4 scones.

**What is the total cost, in pounds,
of Colin's shopping?**

(ii) £_____ [3]

(b) Here is a formula.

$$***R = 3x - 7y***$$

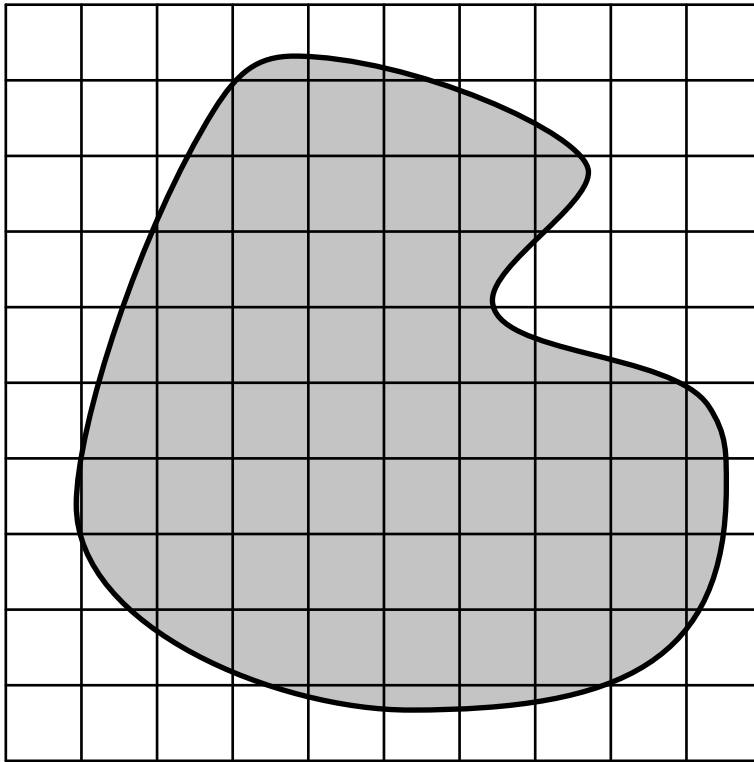
**Work out the value of *R* when $x = 9$
and $y = 3$.**

(b)_____ [2]

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- 12 (a)*The scale drawing below shows part of a wood.
The shaded area is used for paintballing.**

Scale: 1 cm represents 5 km



**Estimate the area used for paintballing.
You must show all your working.**

(a)_____ **[5]**

**(b) 8 friends go paintballing.
They each have 200 paintballs.
The paintballs cost £7.30 for one
hundred.**

**Calculate the total cost of the
paintballs.**

(b) £_____ [2]

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(c) The friends each record how many times they were hit during the game. The results are shown below.

120 157 97 122

103 97 55 61

(i) Calculate the range.

(c)(i)_____ [1]

(ii) Calculate the mean.

(ii)_____ [3]

- (d) (i) The numbers of people who went paintballing each day for four weeks are recorded below.**

128 57 67 98 120 48 46
122 38 47 108 94 78 86
68 53 90 84 49 127 82
105 64 117 111 67 54 104

Complete the following frequency chart.

Number of people	Tally	Frequency
30 – 49		
50 – 69		
70 – 89		
90 – 109		
110 – 129		

[2]

(ii) On how many days did 90 or more people go paintballing?

(d)(ii)_____ [1]

**13 A shop sells packs of paper.
The prices are shown below.**

1 pack	£4.99
2 packs	£9.76
5 packs	£24.50

Mr Jones needs to buy 15 packs of paper.

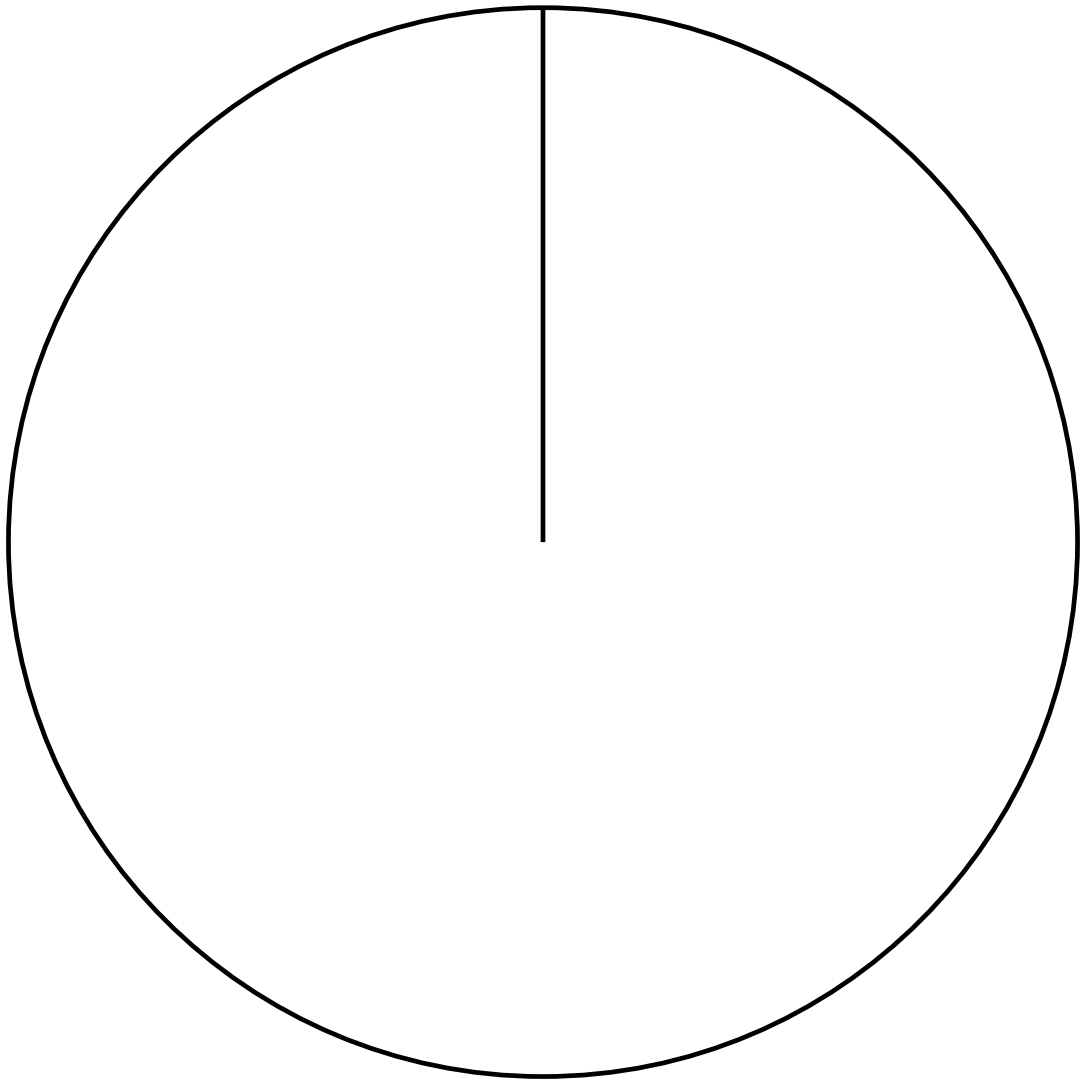
**What is the lowest cost of exactly 15 packs of paper?
Show how you decide.**

£ _____ [4]

- 14 Helen surveys 120 people to find out where they are going for their holidays this year.
Her results are recorded below.**

Destination	Number of people
USA	23
UK	16
France	14
Spain	29
Not going away	38

- (a) Complete the pie chart opposite to show their holiday destinations.
You must show all your working.**



[4]

(b) Work out the percentage of people surveyed who were not going away. Give your answer correct to 1 decimal place.

(b) _____ % [2]

**15 Andrew chooses a number.
His number is:**

- **a common factor of 36 and 48**
- **not a multiple of 3**
- **not a prime number**
- **greater than 1.**

Which number did Andrew choose?

_____ **[2]**

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16 (a) Write 42 as a product of its prime factors.

(a)_____ [2]

(b) Find the lowest common multiple of 24 and 42.

(b)_____ [2]

**(c) A travel firm has to take 95 pupils on a visit.
It has taxis which take 7 passengers and minibuses which take 15 passengers.
They do not want to have any empty seats.**

Work out how many taxis and minibuses they need to use.

(c) taxis = _____

minibuses = _____ [2]

17 The graph opposite is for converting Pounds (£) to Danish Kroner (DKK).

(a) Use the graph to convert £6 to Danish Kroner (DKK).

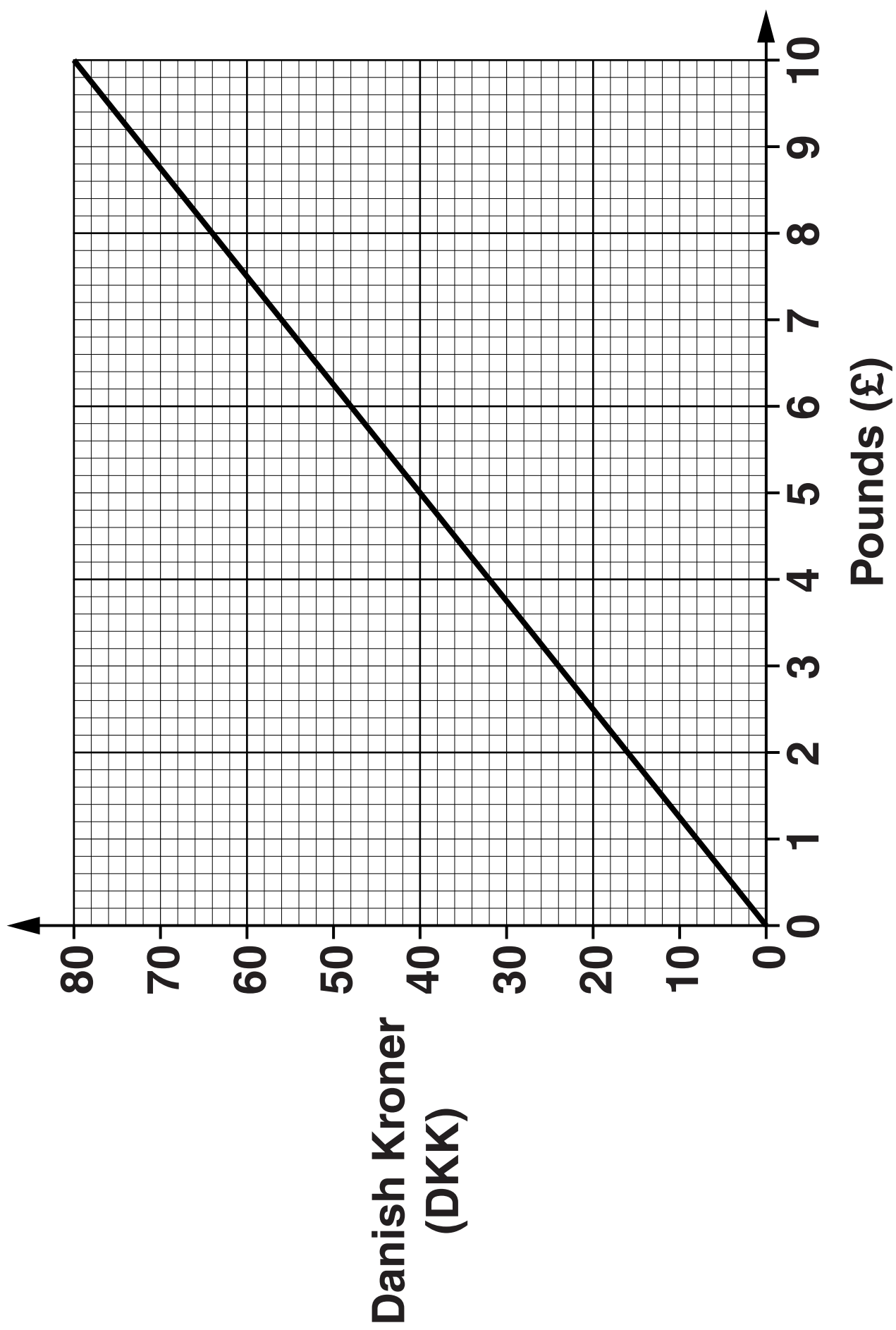
(a) _____ DKK [1]

(b) Work out the gradient of the line.

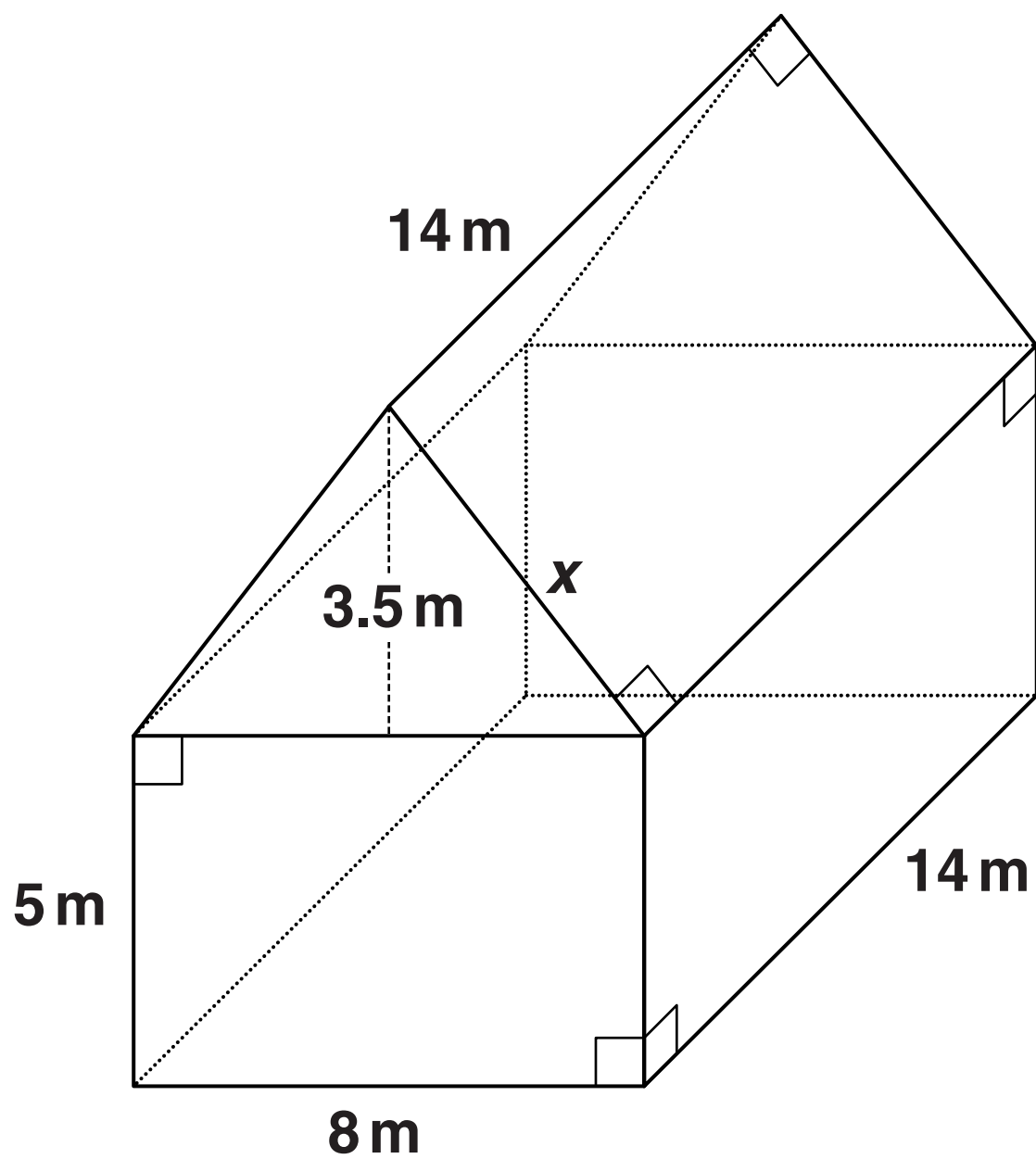
(b) _____ [2]

(c) Convert 152 DKK to Pounds.

(c) £ _____ [2]

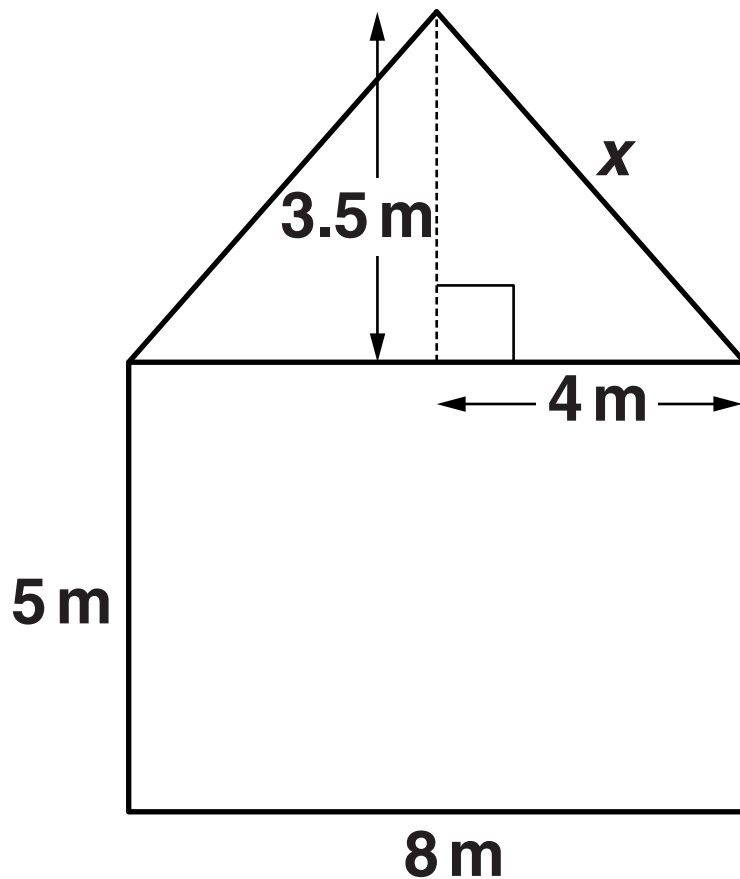


18 Here is a diagram of a barn.



(a) The front elevation of the barn is sketched below.

Calculate the length x .

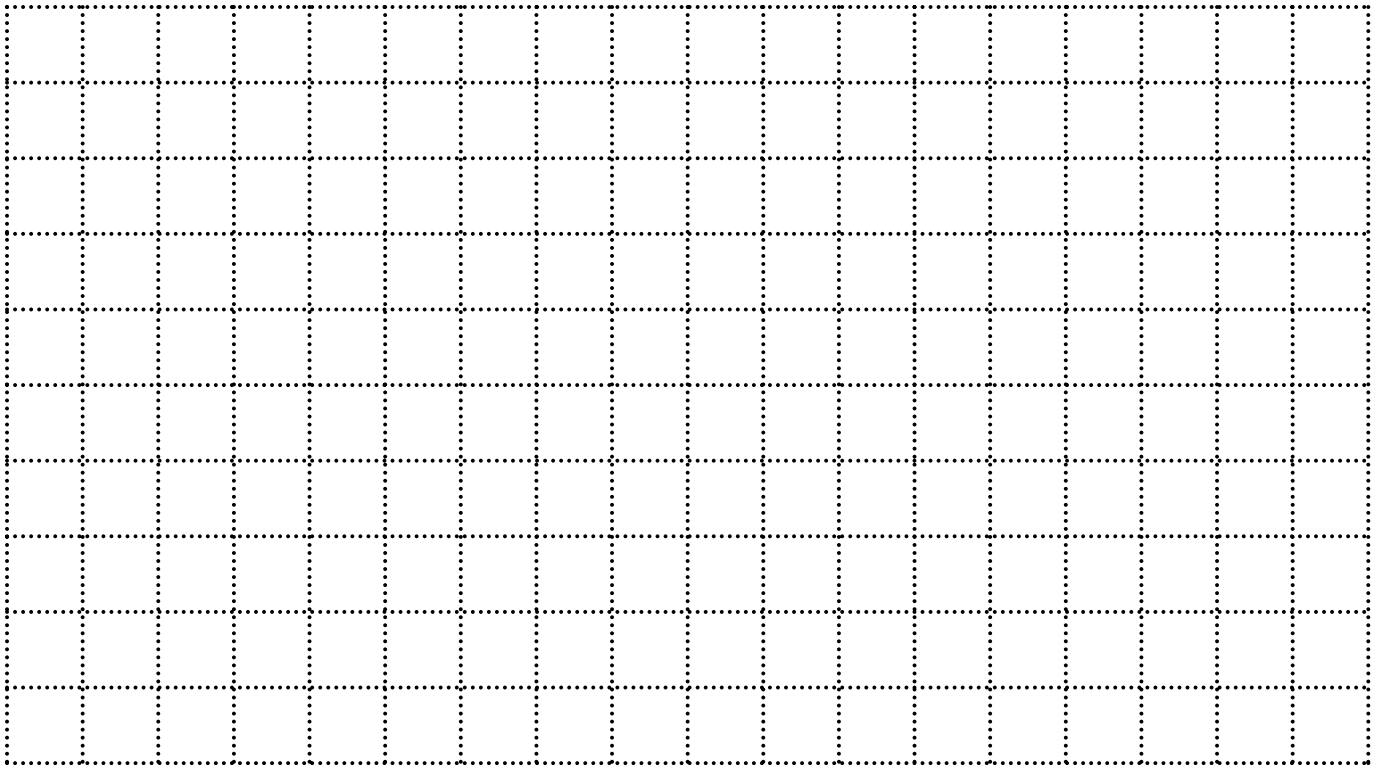


Not to scale

(a) _____ m [3]
47

(b) You may wish to use the extra copy of the diagram included on the insert provided.

Draw the PLAN VIEW of the barn on the grid below using a scale of 1 cm to 1 m.



[1]

19 Here are the first four terms of a sequence.

17 23 29 35

Write an expression for the n th term.

_____ **[2]**

- 20 Golf scores are recorded on cards.
The table below summarises the scores
for one day.**

Score	Frequency
60 – 66	10
67 – 73	15
74 – 80	14
81 – 87	4

- (a) Calculate an estimate of the mean
score.**

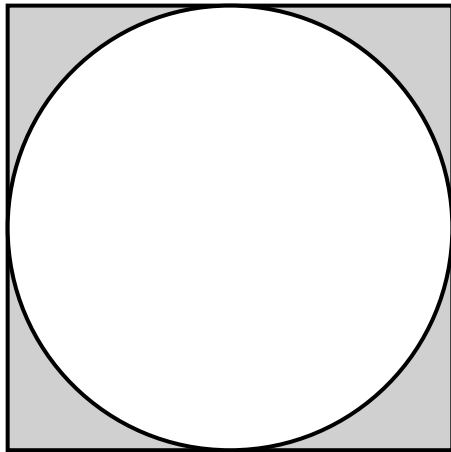
(a)_____ **[4]**

(b) A card is picked at random.

Work out the probability that the score on the card is 73 or below.

(b)_____ [2]

- 21** The diagram below shows a circular pond with paving stones around the edge making up a square. The length of each side of the square is 12 m.



12 m

Not to scale

Calculate the shaded area.

_____ m^2 [4]

22 The equation $x^3 - x^2 - 40 = 0$ has a solution between $x = 3$ and $x = 4$.

Find this value of x correct to 1 decimal place.

Show clearly your trials and the values of their outcomes.

x			

$x =$ _____ [3]

END OF QUESTION PAPER

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