Candidate forename		Candidate surname	

Centre number						Candidate number				

OXFORD CAMBRIDGE AND RSA EXAMINATIONS
GENERAL CERTIFICATE OF SECONDARY EDUCATION

B281A

MATHEMATICS C (GRADUATED ASSESSMENT)

Terminal Paper – Section A (Foundation Tier)

MONDAY 6 JUNE 2011: Afternoon
DURATION: 1 hour

SUITABLE FOR VISUALLY IMPAIRED CANDIDATES

Candidates answer on the question paper.

OCR SUPPLIED MATERIALS:

None

OTHER MATERIALS REQUIRED:

Geometrical instruments
Tracing paper (optional)
Pie chart scale (optional)

WARNING
No calculator can be used for Section A of this paper.

READ INSTRUCTIONS OVERLEAF

DC (NH/JG) 11MEP06265 47572/1

INSTRUCTIONS TO CANDIDATES

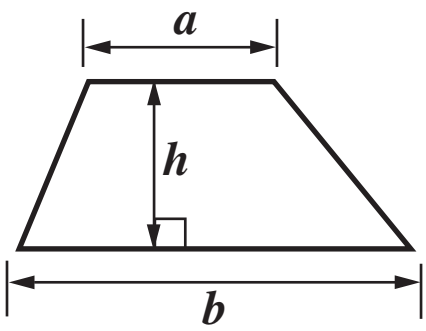
- **Write your name, centre number and candidate number in the boxes on the first page. Please write clearly and in capital letters.**
- **Use black ink. Pencil may be used for graphs and diagrams only.**
- **Read each question carefully. Make sure you know what you have to do before starting your answer.**
- **Show your 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).**
- **Answer ALL the questions.**

INFORMATION FOR CANDIDATES

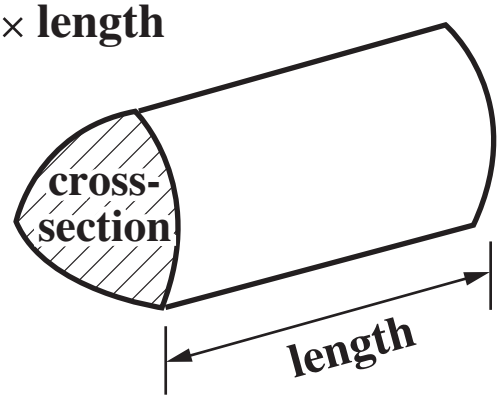
- **The number of marks is given in brackets [ ] at the end of each question or part question.**
- **The total number of marks for this Section is 50.**

FORMULAE SHEET

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



Volume of prism = (area of cross-section) × length



1 (a) The new Wembley stadium covers an area of 103 000 m^2.

Write 103 000 in words.

_____

_____ [1]

(b) To collect a cup, a winning team now has to climb 107 steps.
In the old stadium they climbed 39 steps.

How many more steps does the team climb now than in the old stadium?

(b) _____ [1]

(c) The stadium contains 2618 toilets.

Write 2618 correct to the nearest ten.

(c) _____ [1]

(d) There are 90 000 seats spread over three tiers.

Lower tier	**34 303**
Middle tier	**16 532**
Upper tier	**39 165**

Which tier has the most seats?

(d) _____ tier [1]

(e) Mary and Peter take their child, Sam, for a tour of Wembley stadium.

(i) An adult ticket costs £15 and a child ticket costs £8 for the tour.

How much do they pay altogether for the tour?

(e)(i) £ _____ [2]

(ii) Their tour lasts 90 minutes.
They start their tour at 10:15 am.

At what time do they finish their tour?

(ii) _____ [2]

2 (a) Write 30% as a decimal.

(a) _____ [1]

(b) Write $\frac{3}{5}$ as a percentage.

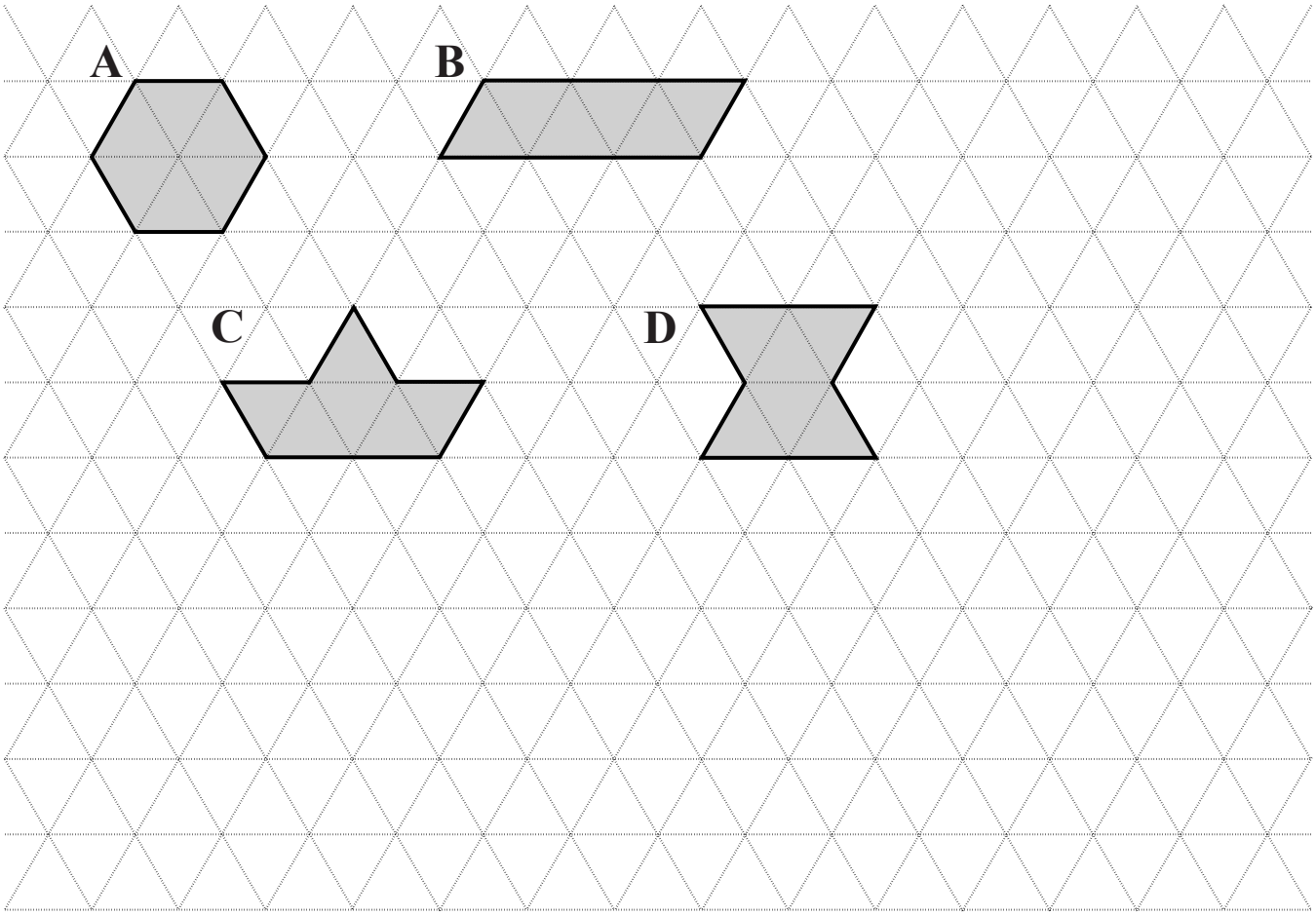
(b) _____% [1]

(c) Jan earns £42 in her Saturday job.
She saves 20% of this.

Work out how much she saves.

(c) £ _____ [2]

3 These shapes are each made from 6 triangles.



(a) What is the special mathematical name for

(i) shape A,

(a)(i) _____ [1]

(ii) shape B?

(ii) _____ [1]

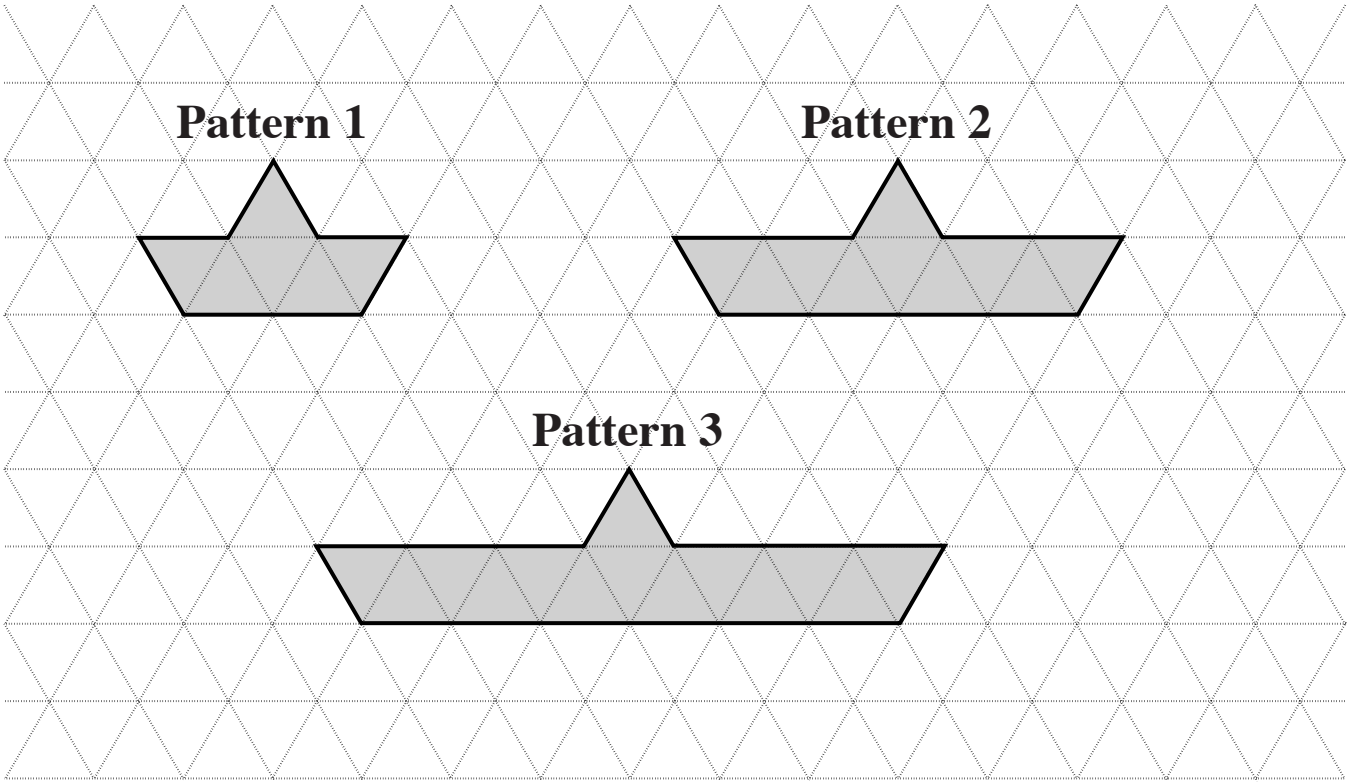
(b) Shape C has one line of symmetry.

On the grid draw a different shape made from 6 triangles, which has just one line of symmetry. (Reflections or rotations of shape C will not count as different.) [1]

(c) State the order of rotation symmetry of shape D.

(c) _____ [1]

(d) Here are the first three patterns in a sequence made from triangles.



This table shows how many triangles there are in each pattern.

Pattern number	1	2	3
Number of triangles in the pattern	6	10	

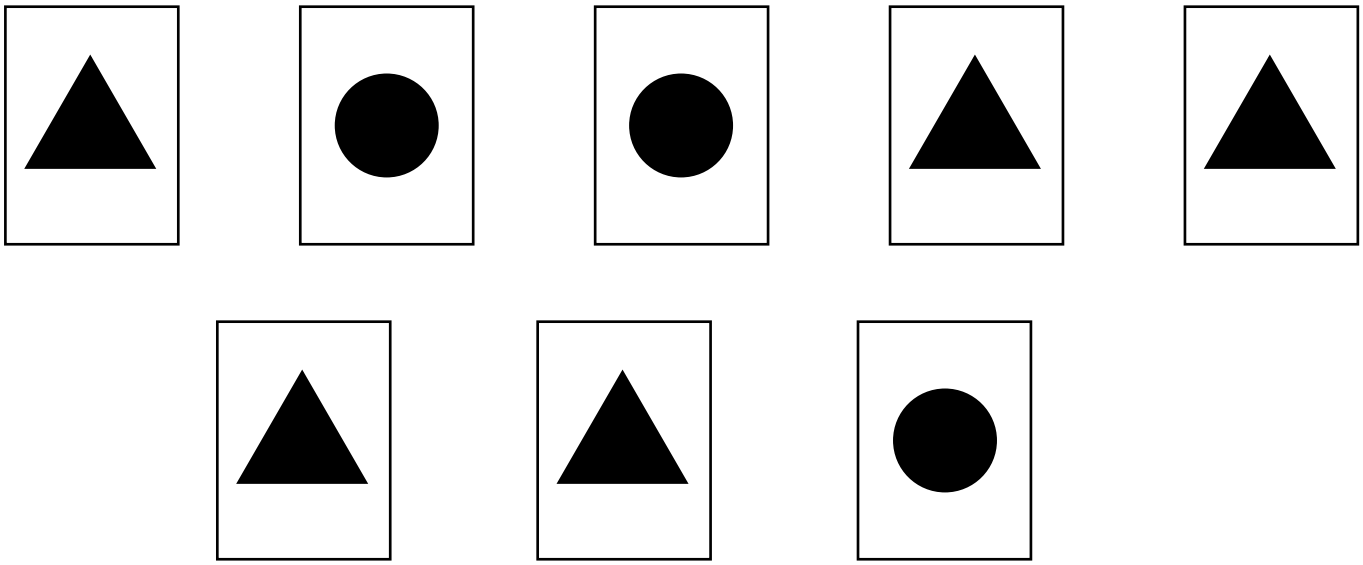
(i) Complete the table for Pattern 3. [1]

(ii) How many triangles are there in Pattern 6? Explain how you decided.

_____ triangles because _____

_____ [2]

4 (a) Trish has these 8 cards.



Trish picks up one of these cards without looking.
She says:

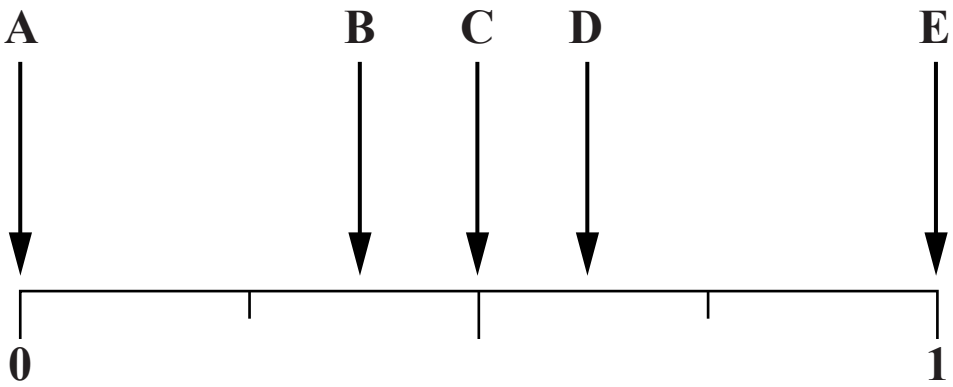
There are two shapes, so there is an evens chance that I pick a card with a triangle.

(i) Explain why Trish is wrong.

_____

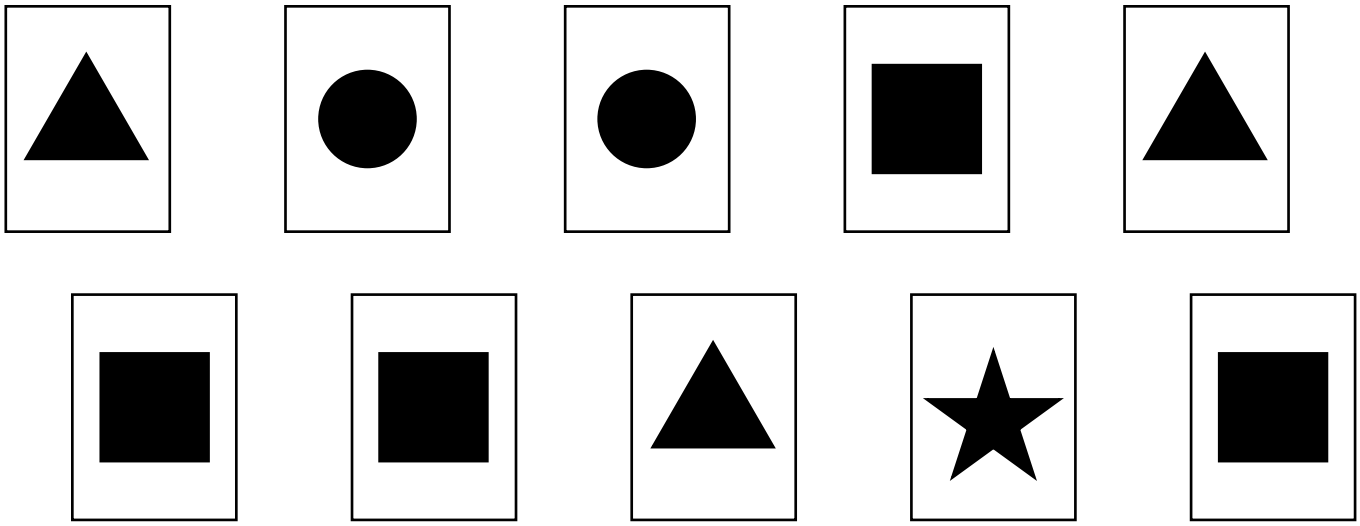
_____ **[1]**

(ii) Which of these arrows shows the probability that Trish picks a card with a circle?



(a)(ii) _____ **[1]**

(b) Jojo has these ten cards.



Jojo picks up one of these cards without looking.

What is the probability that he picks

(i) a card with a triangle,

(b)(i) _____ [1]

(ii) a card that does not have a triangle,

(ii) _____ [1]

(iii) a card with ⬆ on it?

(iii) _____ [1]

5 (a) Simplify.

(i) $7x + x - 6x$

(a)(i) _____ **[1]**

(ii) $3c + 5d + 2c - 4d$

(ii) _____ **[2]**

(b) Solve.

(i) $x - 5 = 12$

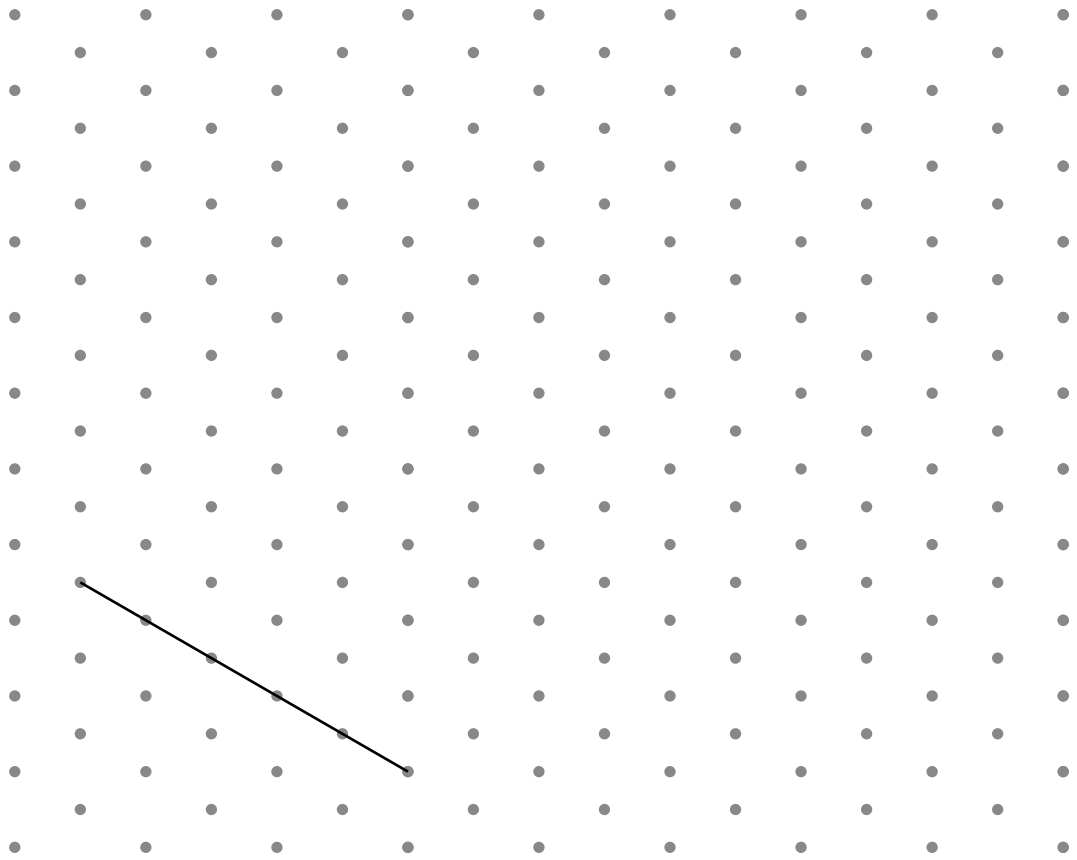
(b)(i) _____ **[1]**

(ii) $2x - 1 = 8$

(ii) _____ **[2]**

6 A cuboid measures 5 cm by 4 cm by 3 cm.

(a) Complete this isometric drawing of the cuboid.
One edge has been drawn for you.



[2]

(b) Work out the volume of the cuboid.
Give the units of your answer.

(b) _____ [3]

7 Work out.

(a) $2^2 \times 5^3$

(a) _____ [2]

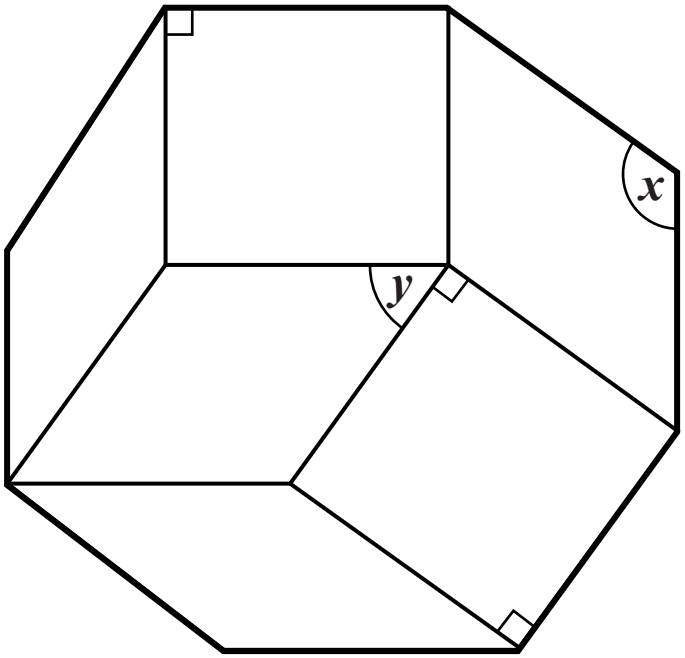
(b) $^-6 + 4$

(b) _____ [1]

(c) $^-3 \times {}^-5$

(c) _____ [1]

8 A regular octagon is divided into 2 congruent squares and 4 congruent rhombuses.



NOT TO SCALE

Work out the sizes of angles *x* and *y*.

x = _____ °

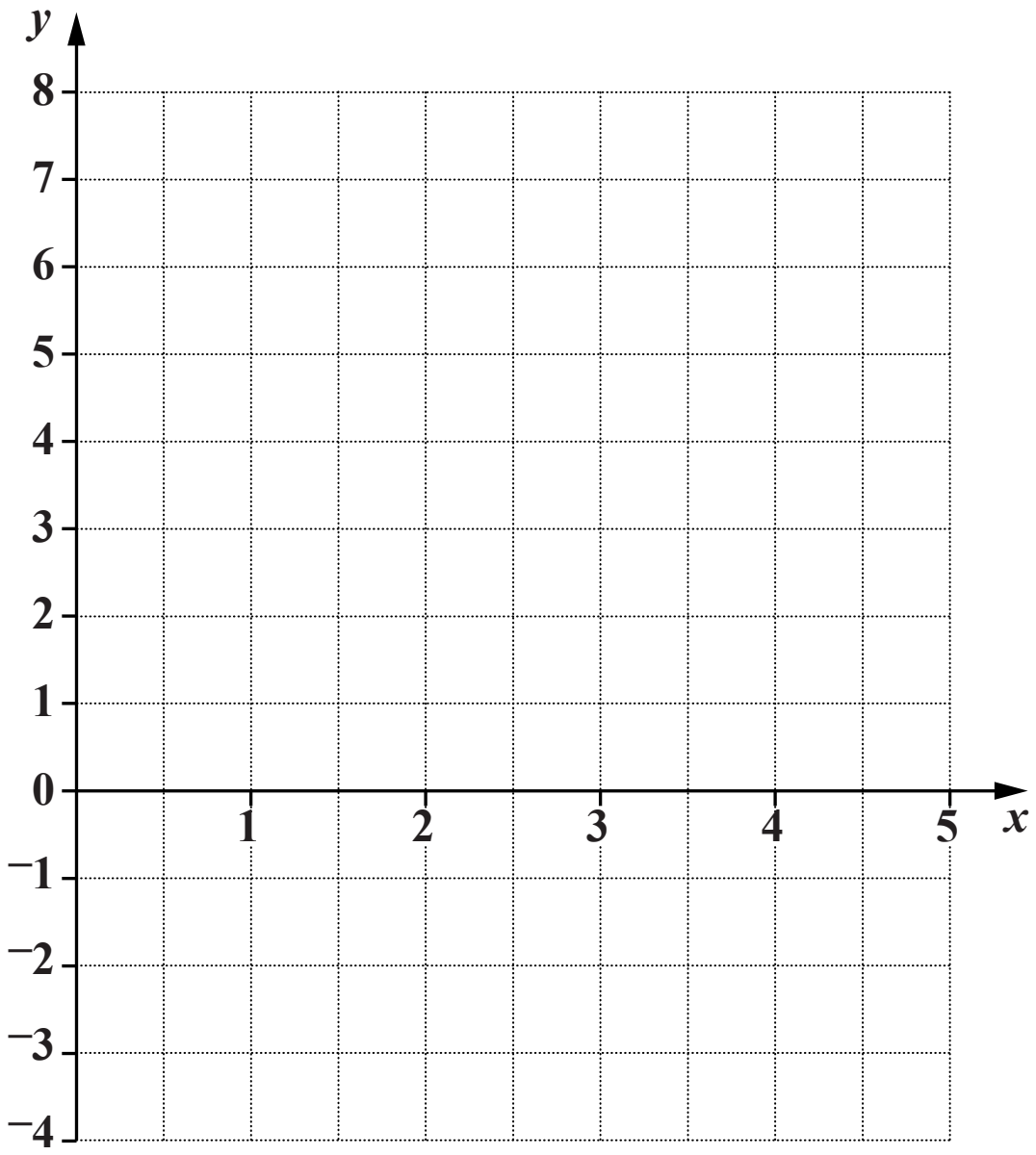
y = _____ ° **[4]**

9 (a) Complete this table for $y = 6 - 2x$.

x	0	2	4
y			$^{-}2$

[2]

(b) Draw the graph of $y = 6 - 2x$.



[2]

10 Work out.

$$4\frac{1}{3} - 1\frac{4}{5}$$

Give your answer as a mixed number.

_____ **[3]**