AQA

Surname _____

Other Names _____

Centre Number _____

Candidate Number _____

Candidate Signature _____

GCSE

MATHEMATICS

F

Foundation Tier

Paper 1 Non-Calculator

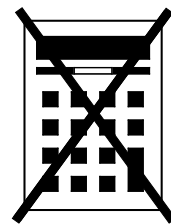## 8300/1F

Thursday 24 May 2018   Morning

Time allowed: 1 hour 30 minutes

At the top of the page, write your surname and other names, your centre number, your candidate number and add your signature.

[Turn over]

For this paper you must have:
- **mathematical instruments**

You must NOT use a calculator.

INSTRUCTIONS

- **Use black ink or black ball-point pen. Draw diagrams in pencil.**

- **Answer ALL questions.**

- **You must answer the questions in the spaces provided. Do not write on blank pages.**

- **Do all rough work in this book. Cross through any work you do not want to be marked.**

INFORMATION

- **The marks for questions are shown in brackets.**

- **The maximum mark for this paper is 80.**

- **You may ask for graph paper, tracing paper and more answer paper. These must be tagged securely to this answer book.**

ADVICE

- **In all calculations, show clearly how you work out your answer.**

DO NOT TURN OVER UNTIL TOLD TO DO SO

Answer ALL questions in the spaces provided

1 **Work out** $\dfrac{1}{2} \times 5$

Circle your answer. [1 mark]

$\dfrac{5}{10}$ $\qquad 2\dfrac{1}{2} \qquad$ $\dfrac{1}{10}$ $\qquad 2\dfrac{1}{5}$

2 **Circle the number that is 5 LESS than −2 [1 mark]**

$-10 \qquad -7 \qquad -3 \qquad 3$

3 **Simplify $3 \times a \times 3 \times a$**

Circle your answer. [1 mark]

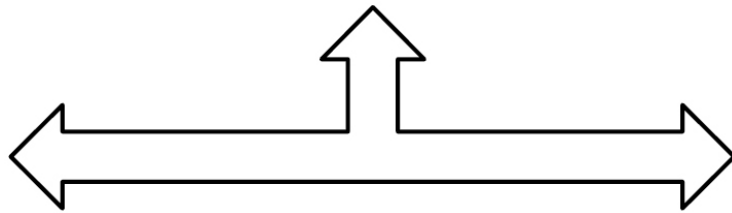$9a \qquad 6a^2 \qquad 9a^2 \qquad 6a$

4   **Which shape is SIMILAR to shape X?**

X
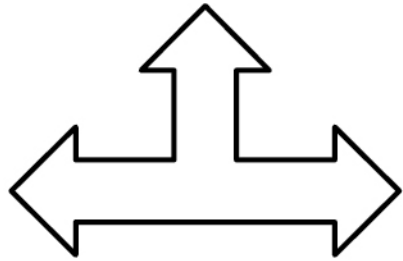
Circle the correct letter.
[1 mark]

A

B

C

D

4

5 **Work out 20% of 14 000**
[2 marks]

_____

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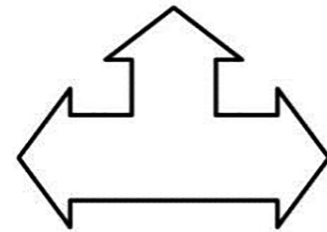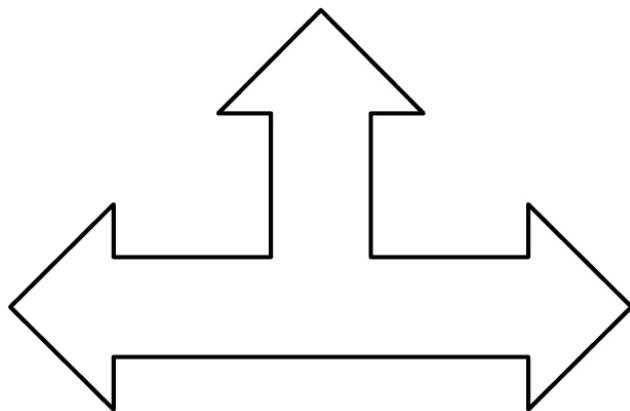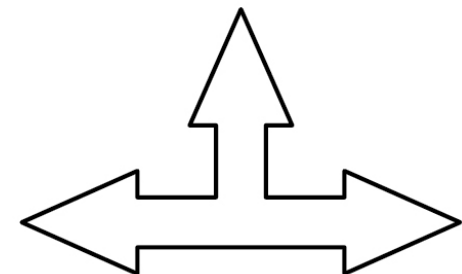
Answer _____

6 (a) **Write 0.85 as a fraction in its simplest form. [2 marks]**

_____

_____

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Answer _____

6 (b) **Write $\dfrac{5}{8}$ as a decimal. [1 mark]**

_____

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Answer _____

[Turn over]

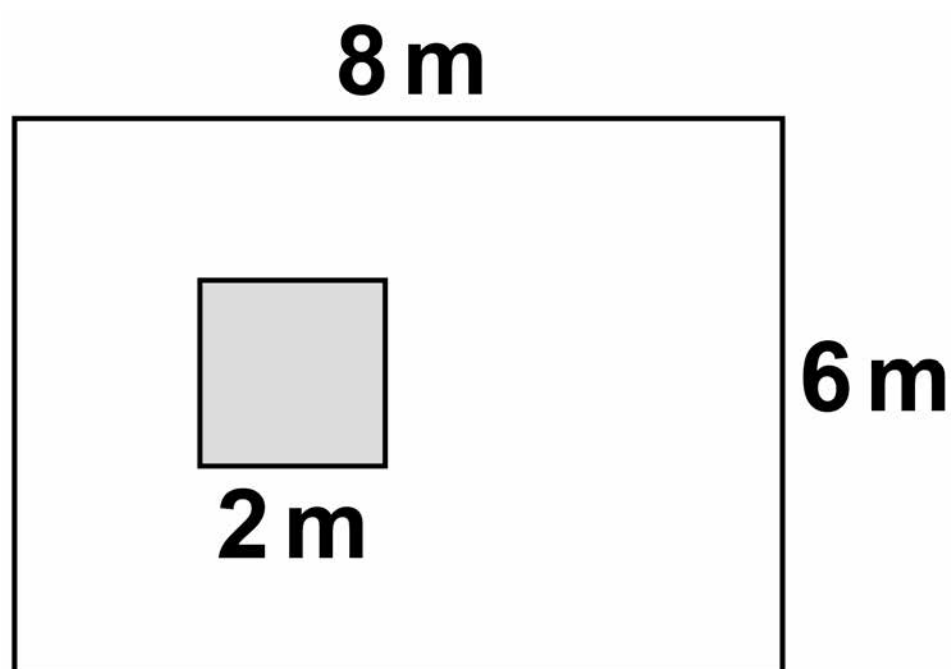**7** **A rectangular carpet measures 8 m by 6 m**

Part of the carpet is covered by a square rug of length 2 m

The diagram is not drawn accurately.

8 m

6 m

2 m

Show that $\dfrac{1}{12}$ **of the carpet is covered by the rug.** **[2 marks]**

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[Turn over]

7

8 **Sam, Carl and Erik share 40 sweets.**

Erik gets the largest share.

What is the SMALLEST possible number of sweets that Erik could get? [2 marks]

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Answer _____

9   **The time in Rio is three hours behind London.**

The time in New York is five hours behind London.

What is the time in New York when it is 1.00 am in Rio?
[2 marks]

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Answer _____

[Turn over]

10   **Here is a list of numbers.**

5   6   1   3   5   5   8   4   2   2

10 (a)   **Work out the median.**
[2 marks]

_____

_____

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_____

Answer _____

10 (b) **Work out the mean.** **[2 marks]**

_____

_____

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Answer _____

8

[Turn over]

11 **300 passengers go on a coach trip.**

Each coach takes 50 passengers.

Each passenger pays £25

The table shows the costs for the coach company.

	Cost for each coach
Pay for driver	**£90**
Fuel	**70p per mile**

**Each coach travels 200 miles.
Work out the TOTAL profit the company makes from this trip.
[6 marks]**

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Answer £ _____

12 (a) **Work out 16.4 – 3.92 + 7.8**
[2 marks]

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Answer _____

12 (b) Work out 2843.61 ÷ 7
[2 marks]

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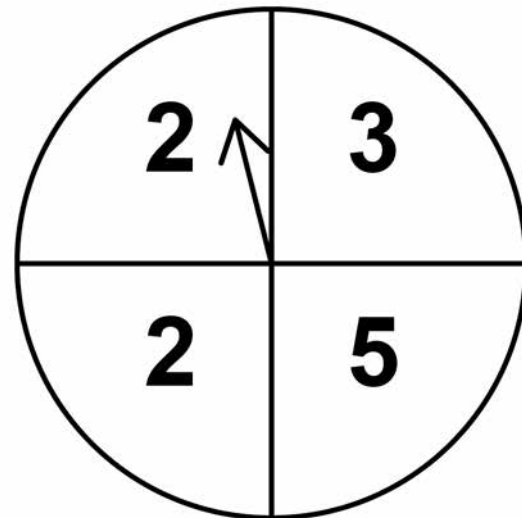
Answer _____

[Turn over]

10

13 **In a game, two fair spinners are spun.**
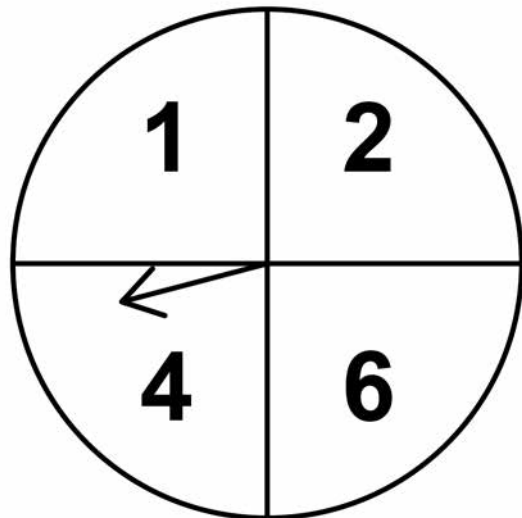
Spinner A   **Spinner B**

If the numbers the arrows land on are different, the score is the HIGHER number.

If the numbers the arrows land on are the same, the score is 0

13 (a) **Complete the table to show the possible scores. [2 marks]**

Spinner B

		2	2	3	5
Spinner A	**1**	2			
	2		0		
	4				
	6				

13 (b) **Write down the probability that the score is an ODD number. [1 mark]**

_____

_____

Answer _____
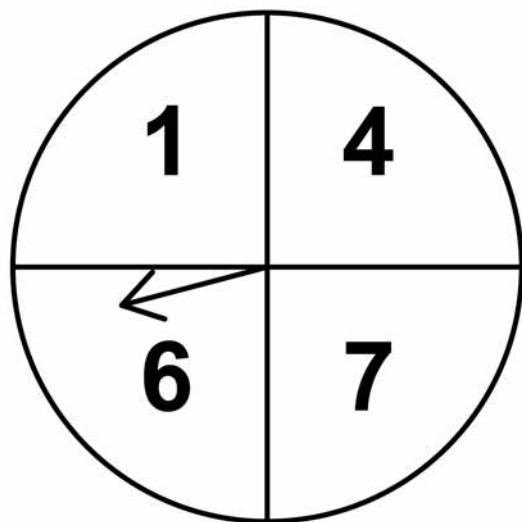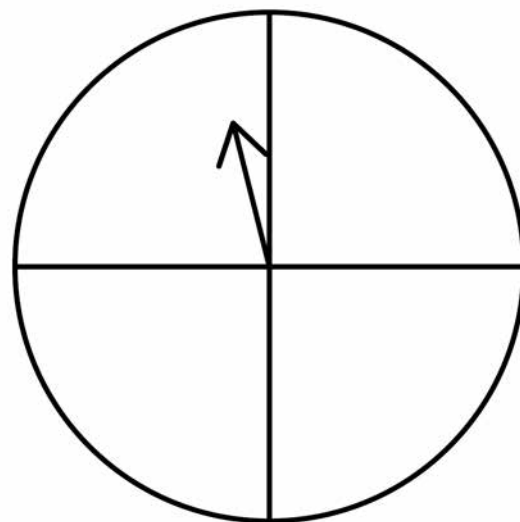
[Turn over]

13 (c) **The same game is played using spinners C and D.**

The numbers on C are shown.

Spinner C   **Spinner D**

21

The table shows some of the possible scores.

Spinner D

Spinner C				
1	4			
4		0		
6				
7			0	8

Write the missing numbers on spinner D. [2 marks]

5

14   **2 people working at the same rate will take 6 hours to paint a room.**

14 (a)   **Assuming that they ALL work at this rate, how long will it take 3 people to paint the room?**
[2 marks]

_____

_____

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Answer _____ hours

14 (b) **In fact, the THIRD person works at a faster rate.**

How does this affect the time to paint the room? [1 mark]

_____

_____

_____

[Turn over]

15 $3a + b = 7$ and $6x + 8y = 40$

Show that $9a + 3b$ has a GREATER value than $3x + 4y$

[2 marks]

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$\boxed{5}$

16 Circle the point that lies on the line $x - 3 = 0$

[1 mark]

(3, 0)   (0, 3)   (−3, 0)   (0, −3)

17 a is a negative odd number.

Circle the words that describe a^2

[1 mark]

negative and odd

negative and even

positive and odd

positive and even

[Turn over]

18 **Circle the ratio which is the same as the scale 1 cm represents 1 km [1 mark]**

1 : 100   **1 : 1000**

1 : 10 000   **1 : 100 000**

19 **Circle the percentage that is closest in value to $\frac{1}{3}$ [1 mark]**

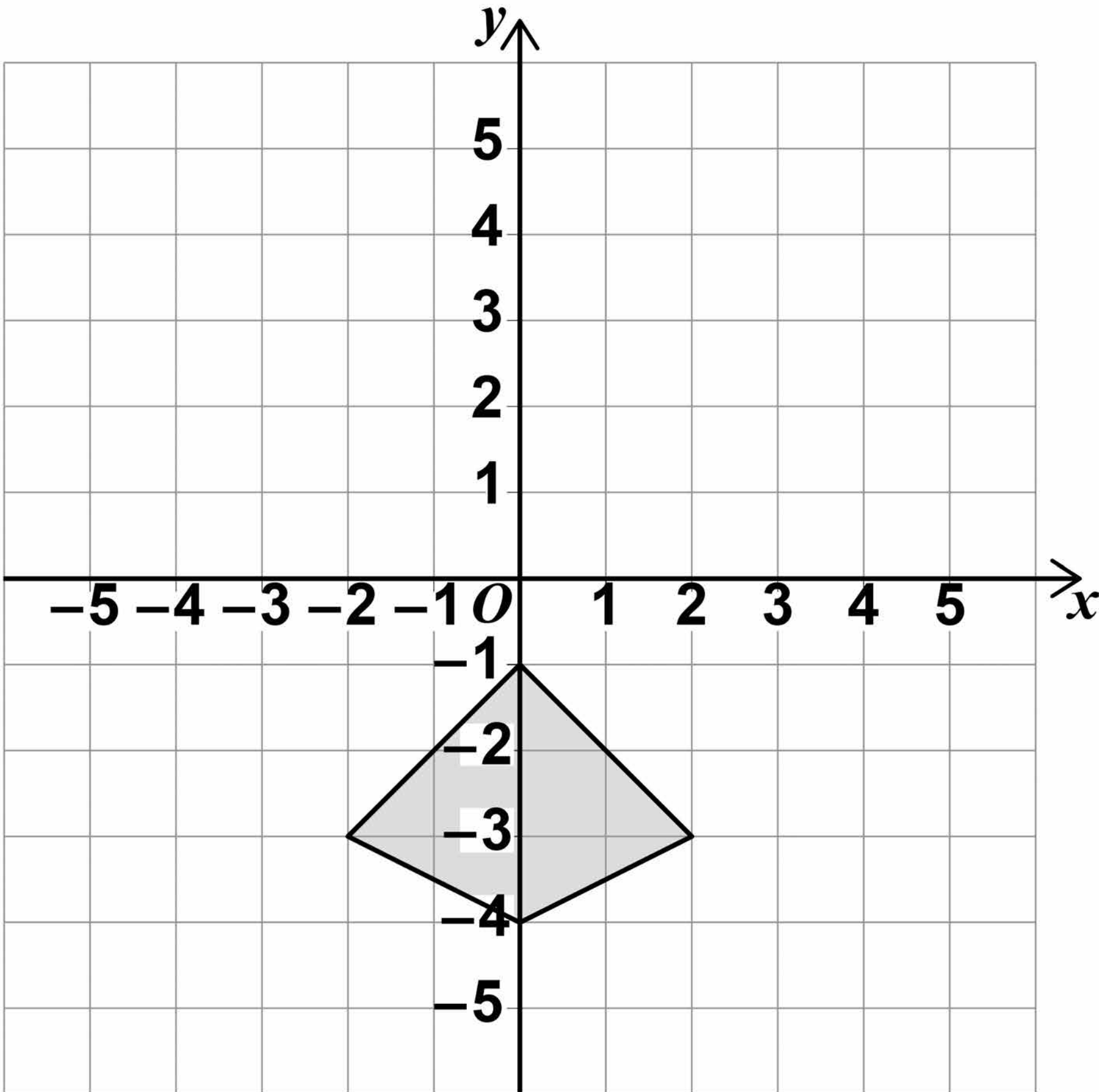**30%**   **33%**

33.3%   **33.4%**

20 **Work out** $\sqrt{121} - (13 - 5 \times 2)^2$
[3 marks]

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Answer _____

[Turn over]

7

21 (a) **Reflect the triangle in the line**
$x = 2$
[2 marks]
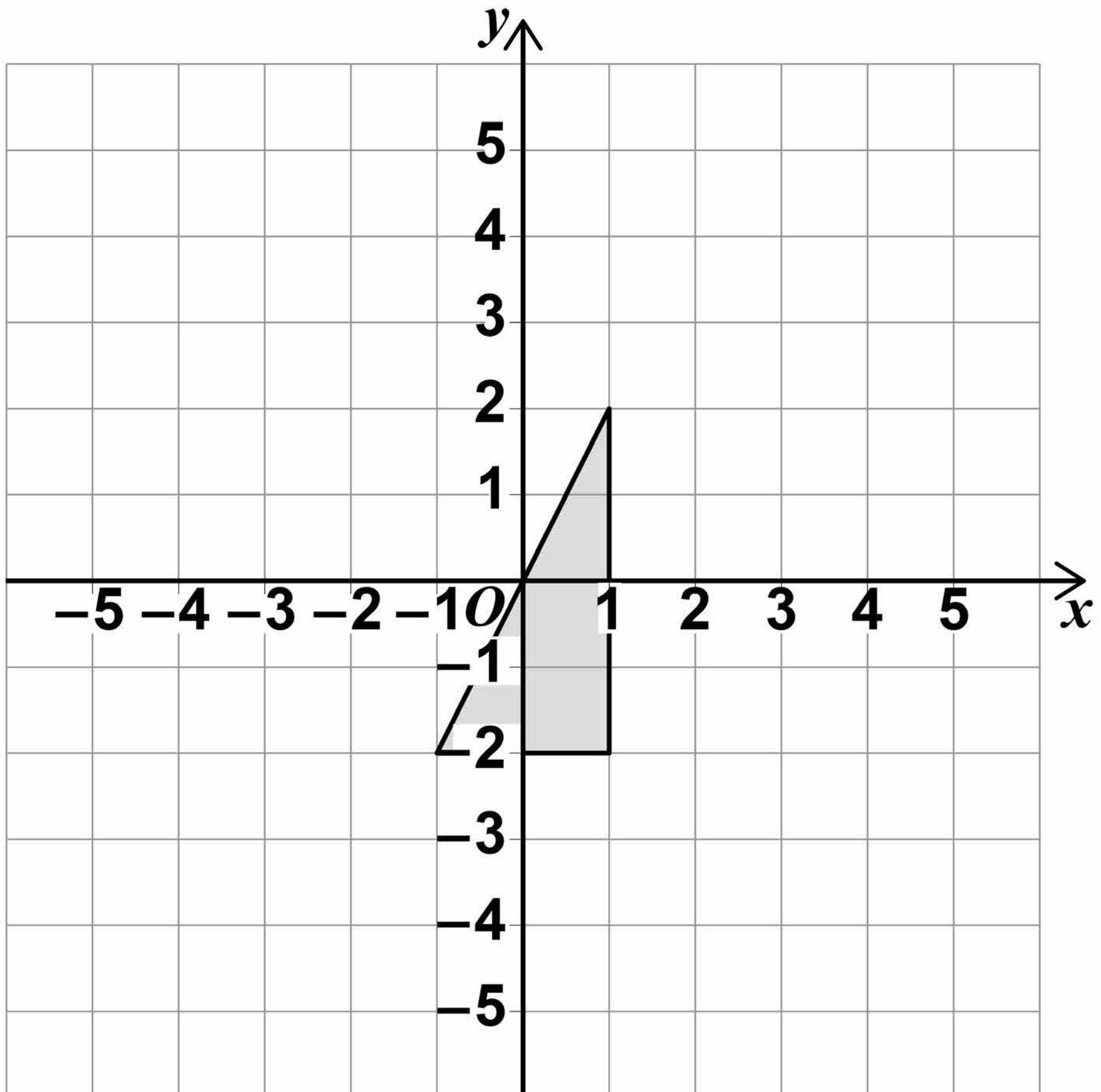
21 (b)   Rotate the kite 90° anticlockwise about (0, 0)

[2 marks]

[Turn over]

4

22   Anna plays a computer game.

Each game is a win or a loss.

She wins three quarters of her first 24 games.

She then wins her next 12 games.

For all 36 games, work out the ratio

wins : losses
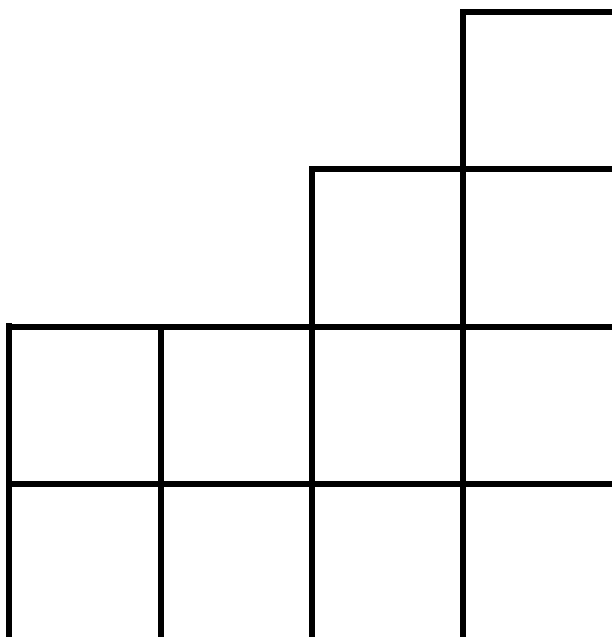
Give your answer in its simplest form.   [3 marks]

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Answer _____ : _____

23   **A solid shape is made from centimetre cubes.**

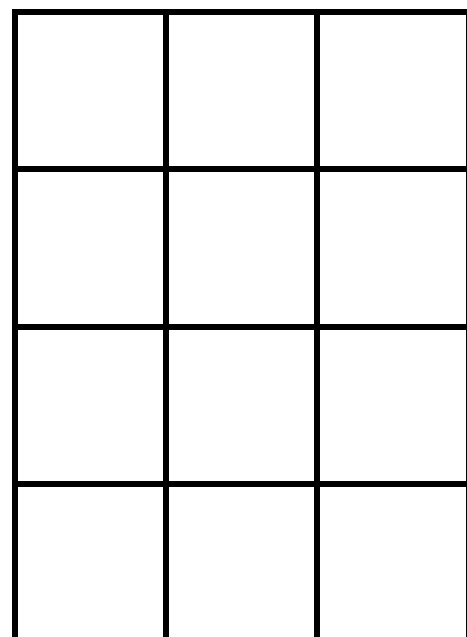**Here are the plan, side elevation and front elevation of the shape.**
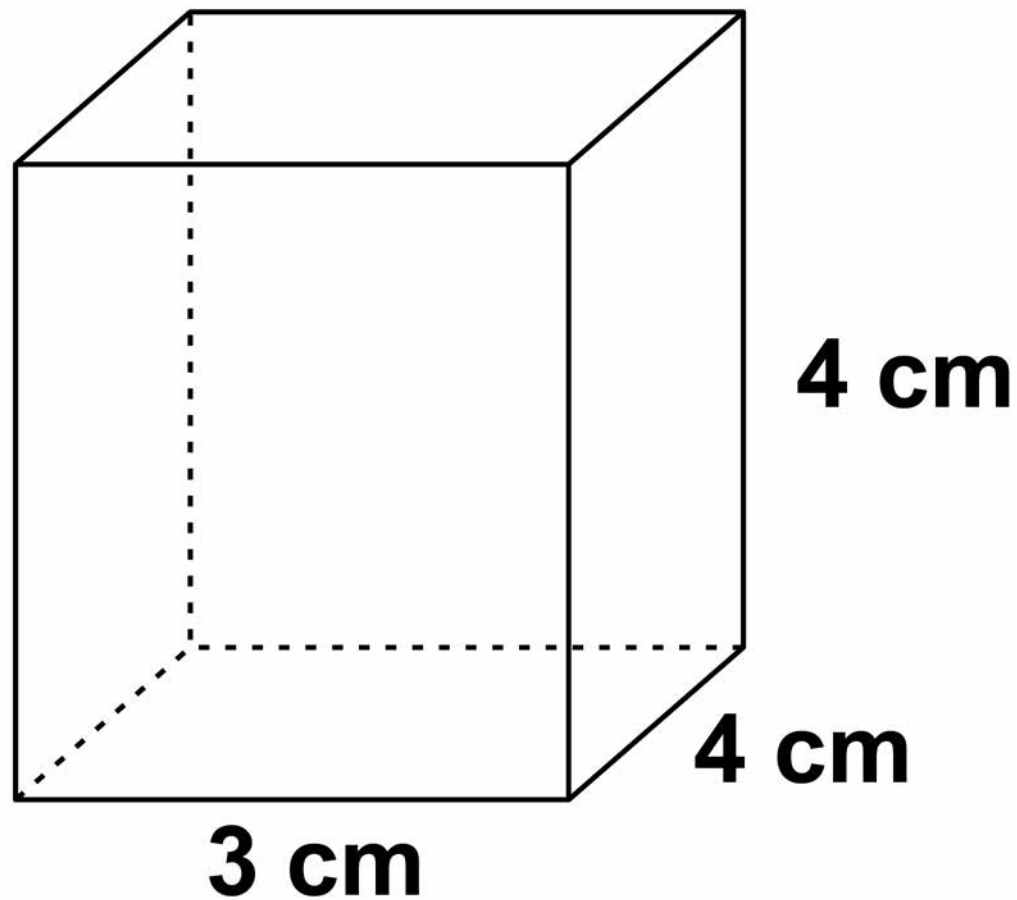
Plan
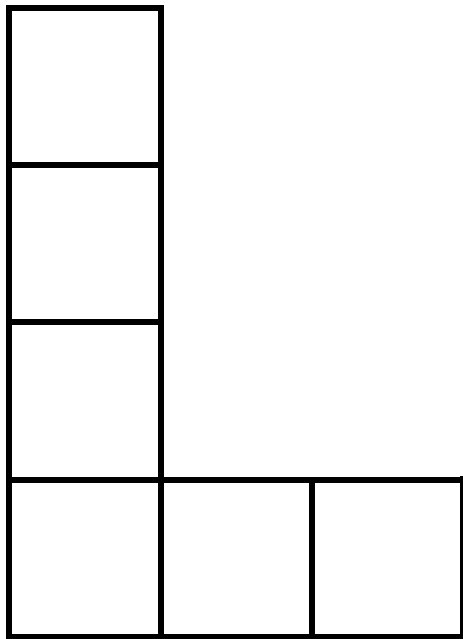
Side elevation

Front elevation

Centimetre cubes are added to make this cuboid.

The width of the cuboid is 3 cm, the height is 4 cm and the depth is 4 cm.

How many cubes are added? [3 marks]

Answer _____

24 **Divide 405 in the ratio 4 : 11**
[3 marks]

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Answer _____and _____

25   **The height of Zak is 1.86 metres.**

The height of Fred is 1.6 metres.

Write the height of Zak as a fraction of the height of Fred.
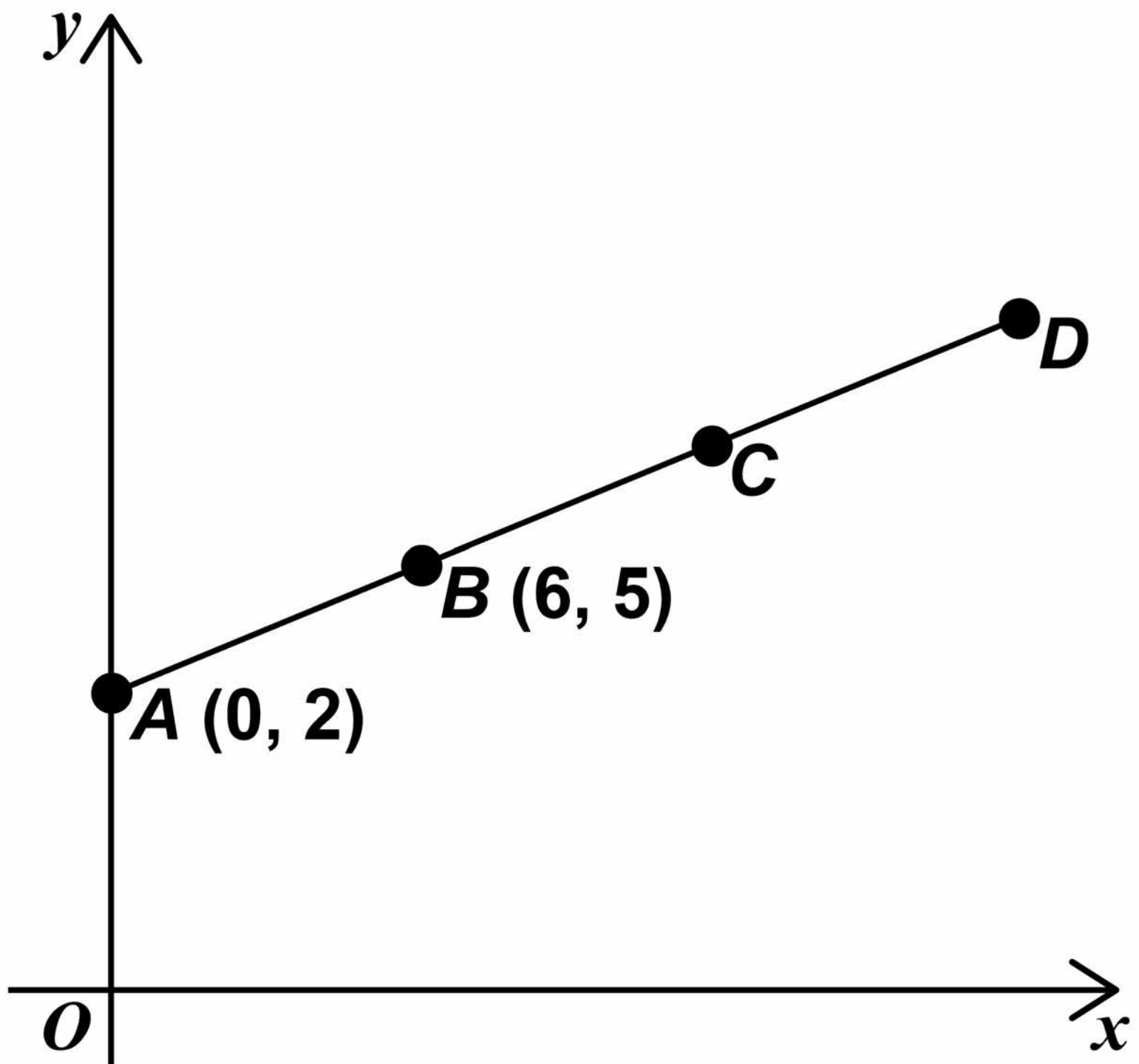
Give your answer in its simplest form.   **[3 marks]**

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Answer _____

26   *A* (0, 2) and *B* (6, 5) are points on the straight line *ABCD*.

The diagram is not drawn accurately.

AB = *BC* = *CD*

**Work out the coordinates of *D*.
[3 marks]**

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Answer (_____ , _____)

9

[Turn over]

27 **A coin is thrown 50 times.**
It lands on heads 31 times.

27 (a) **Write down the relative**
frequency it lands on heads.
[1 mark]

Answer _____

27 (b) Raj says,

"The coin is biased towards heads."

Use the data to give a reason why he might be correct.
[1 mark]

_____

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28 Solve $5(x + 3) < 60$
[2 marks]

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Answer _____

29 **The range of a set of numbers is** $15\frac{1}{4}$

The smallest number is $-2\frac{7}{8}$

Work out the largest number.
[3 marks]

_____

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Answer _____

30 y is inversely proportional to x.
Complete the table. [2 marks]

x	12	6	
y		4	8

$\overline{9}$

[Turn over]

31 **A large rectangle is made by joining three identical small rectangles as shown.**

The diagram is not drawn accurately.
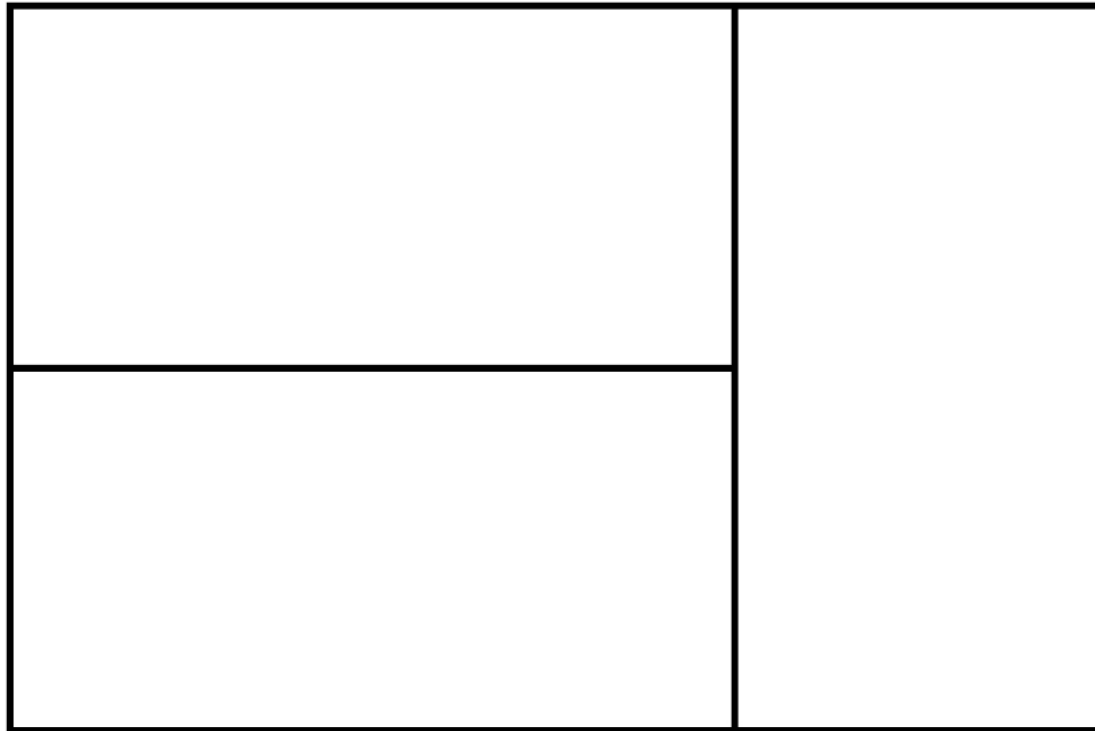
The perimeter of one small rectangle is 15 cm

Work out the perimeter of the large rectangle.
[4 marks]

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Answer _____ **cm**

[Turn over]

32 **Put these numbers in order from smallest to largest.**
[2 marks]

8×10^{-4} 4×10^{-2}

6×10^{-4} 0.07

_____

_____

_____

_____

_____

Smallest _____

_____

_____

Largest _____

END OF QUESTIONS

6

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