

Name: _____

BennettMaths AQA 2H – Part 1

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

1 Write $28 : 8$ in the form $n : 1$

[1 mark]

Answer _____ : 1

2 Four consecutive terms from the Fibonacci sequence are 3 5 8 13
Write down the next term.

[1 mark]

Answer _____

- 3 Write down the reciprocal of $\frac{5}{8}$ [1 mark]

Answer _____

- 4 The price of a necklace increases by 37.5% to £38.17
Work out the **original** price of the necklace. [2 marks]

Answer £ _____

Turn over for the next question

She has

- Work out total **value** of 2p coins : total **value** of 5p coins
Give your answer in its simplest form.

[4 marks]

Answer _____ :

- 6 (a) Part of a regular polygon is shown.



Not drawn
accurately

Assume that the polygon is a hexagon.

Work out the size of an **exterior** angle.

[2 marks]

Answer _____ °

- 6 (b) In fact, the polygon has **more** sides than a hexagon.

What does this mean about the size of an exterior angle?

Tick **one** box.

[1 mark]

☐

It is more than the answer to part (a)

☐

It is the same as the answer to part (a)

☐

It is less than the answer to part (a)

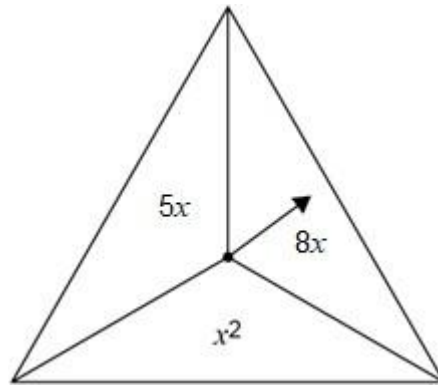
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It could be any of the above

7

In a game,

- an ordinary fair six-sided dice is rolled
- the fair spinner shown is spun.



The score is the number on the dice **substituted** into the spinner expression.

7 (a) Complete the table to show all of the possible scores.

[2 marks]

	1	2	3	4	5	6
$5x$						30
$8x$		16				
x^2				16		

- 7 (b)** A player wins the game if their score is 30 or more.

Work out the probability that they win the game.

[1 mark]

Answer _____

- 7 (c)** The game is played 756 times.

Estimate the number of games that are won.

[2 marks]

Answer _____

8 $(a - 5)x^2 + 4b \equiv 3x^2 + 20$

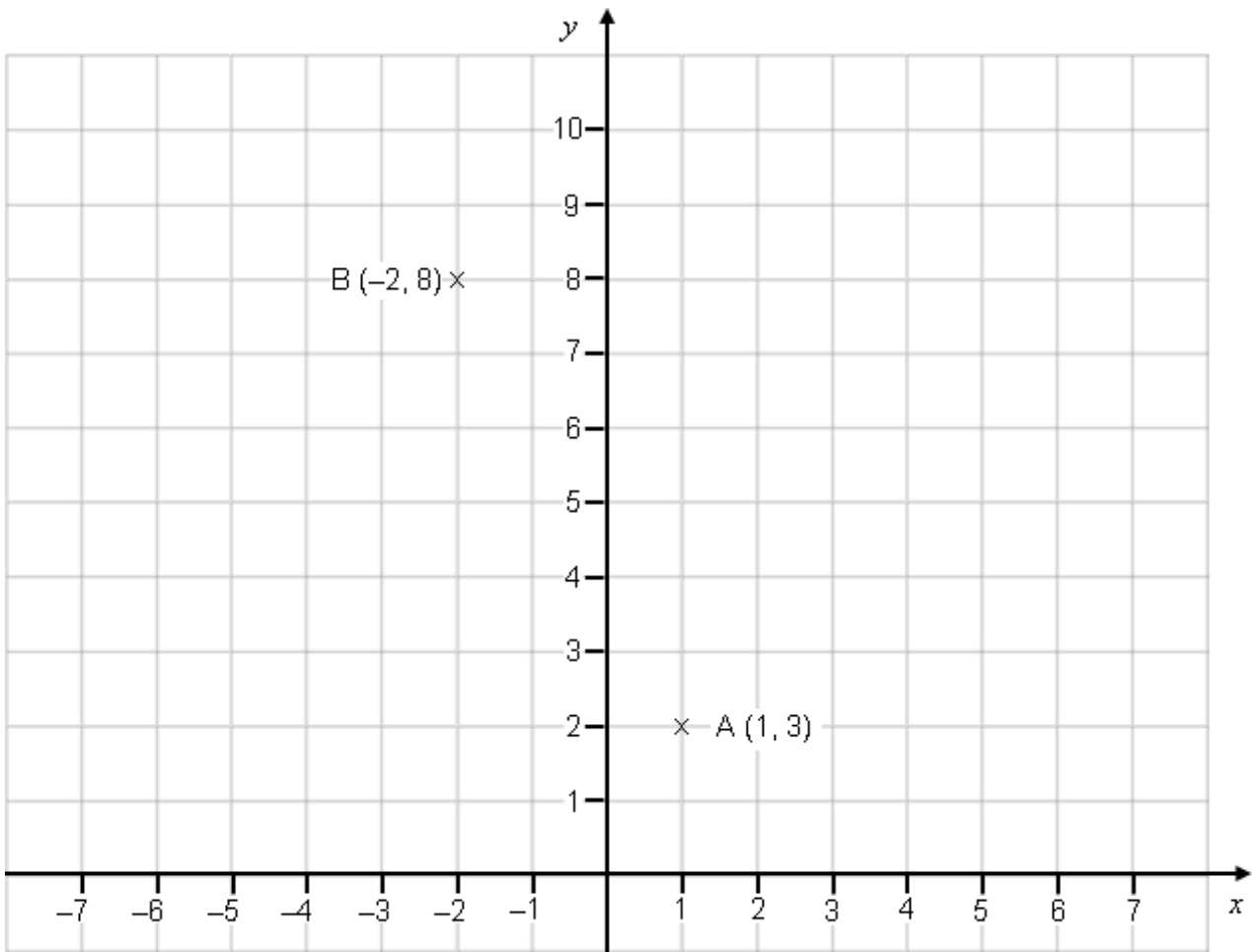
Work out the values of a and b .

[2 marks]

$a =$ _____ $b =$ _____

Turn over for the next question

- 9 A (1, 2) and B (-2, 8) are points on a centimetre grid.



ABCD is a parallelogram.

AD and BC are **horizontal** and each has length 5 cm

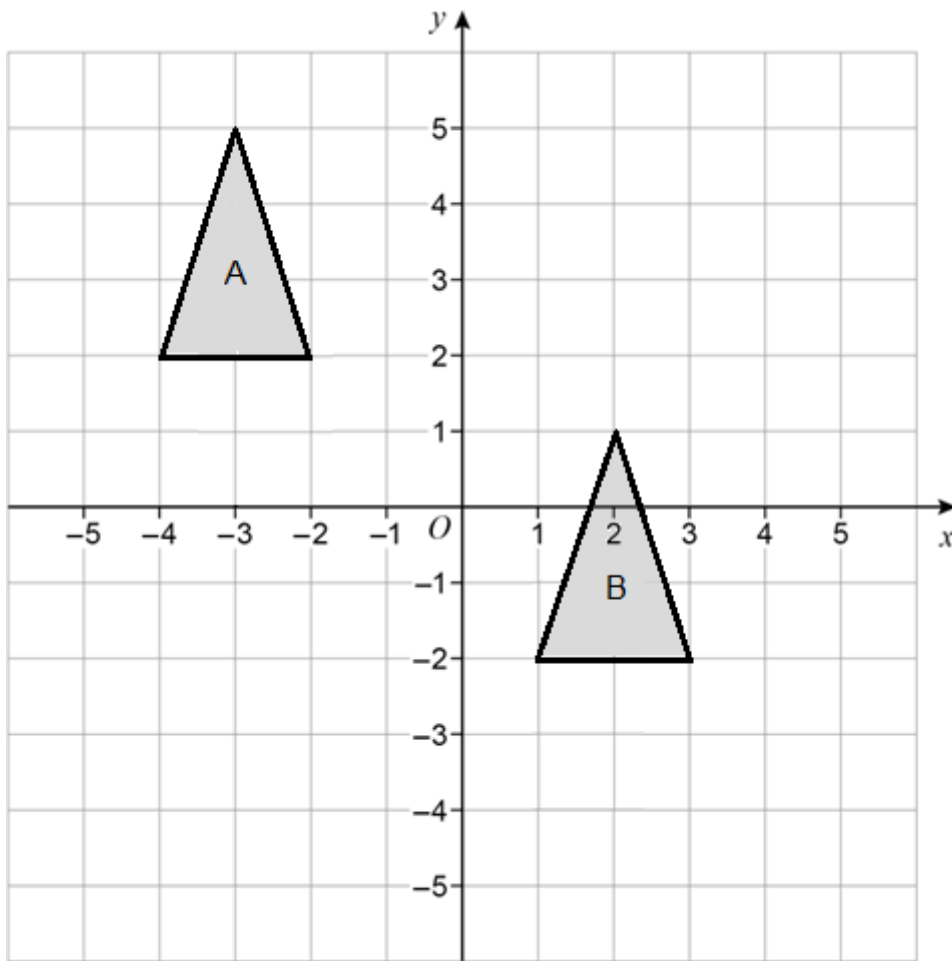
The diagonals of ABCD cross at E.

Work out the **two** possible pairs of coordinates of E.

[4 marks]

Answer (_____ , _____) and (_____ , _____)

- 10 Write down the translation vector that maps shape A onto shape B. [2 marks]



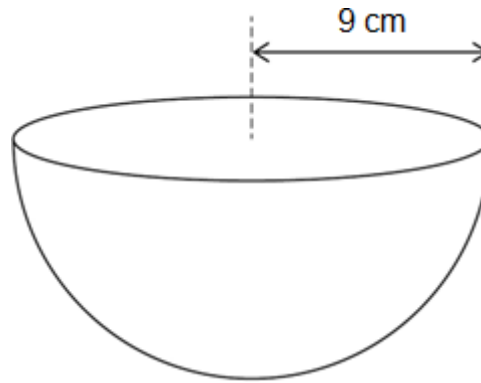
Answer _____

Turn over for the next question

11

$$\text{Volume of a sphere} = \frac{4}{3} \pi r^3$$

A hollow bowl is in the shape of a hemisphere with radius 9 cm



Water is poured into the bowl
at a rate of 185 cm^3 per second
for 7 seconds.

Does the water fill **more than** 80% of the bowl?

You **must** show your working.

[4 marks]
