



General Certificate of Secondary Education
2024

Centre Number

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Candidate Number

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Mathematics

Unit M6 Paper 1

(Non-Calculator)

Foundation Tier



MV24

[GMC61]

MONDAY 3 JUNE, 9.15 am–10.15 am

Time

1 hour, plus your additional time allowance.

Instructions to Candidates

Write your Centre Number and Candidate Number in the spaces provided at the top of this page.

You must answer the questions in the spaces provided.

Do not write on blank pages or tracing paper.

Complete in black ink only.

Answer **all sixteen** questions.

All working should be clearly shown in the spaces provided. Marks may be awarded for partially correct solutions.

You **must not** use a calculator for this paper.

Information for Candidates

The total mark for this paper is 50.

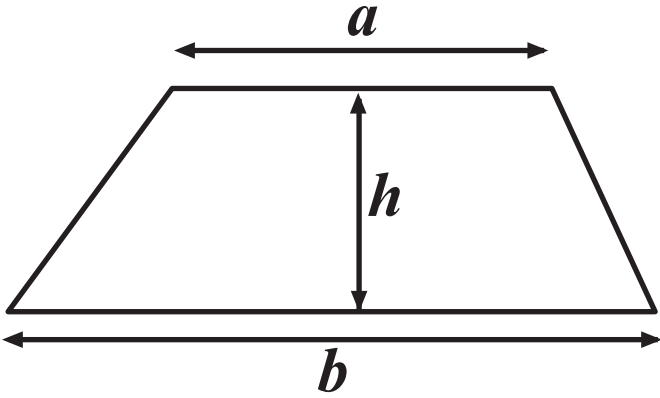
Figures in brackets printed at the end of each question indicate the marks awarded to each question or part question.

You should have a ruler, compasses and a protractor.

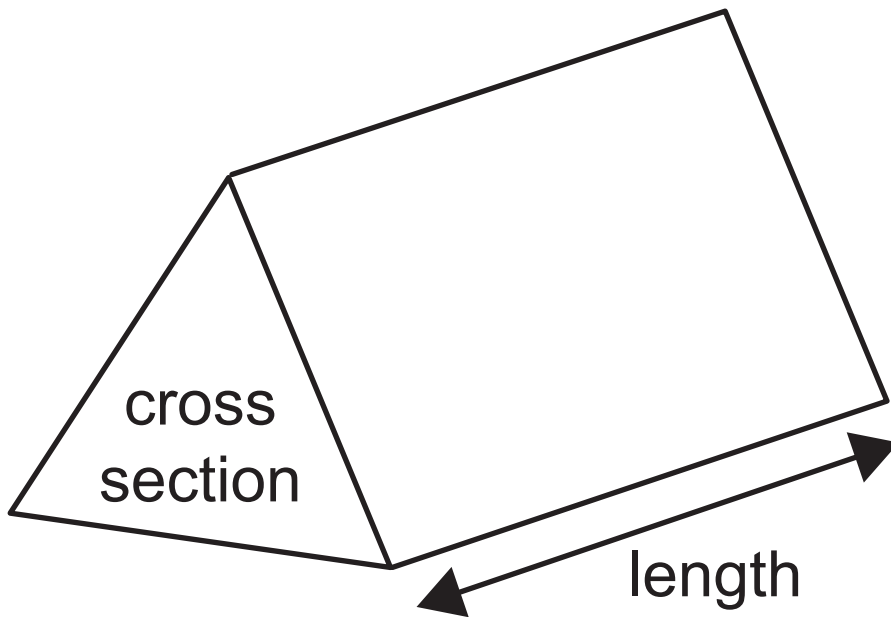
The Formula Sheet is on page 3.

Formula Sheet

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



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



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1 (a) **Estimate** the answer to [2 marks]

$$\frac{2.9 \times 30.1}{9.2}$$

Show your working clearly.

Answer _____

(b) Jim wants to buy 2 adult tickets and 3 child tickets for a show.

An adult ticket costs £29.90

A child ticket costs £14.95

Jim has £100 to spend.

Use an **estimation method** to decide if Jim has enough money. [2 marks]

Show all your working.

Does Jim have enough money?

Answer _____

2 (a) Declan has some marbles.

Marie has 5 more than Declan.

Together they have 21 marbles.

How many marbles do they each have?
[2 marks]

Answer Declan has _____ marbles

Marie has _____ marbles

(b) Kirk is twice as old as Sharon.

The sum of their ages is 84

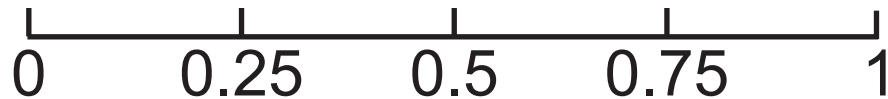
How old is Sharon? [2 marks]

Answer _____

- 3 (a) A card is selected at random from a box of greetings cards.

The box contains only birthday cards, blank cards and congratulations cards.

- (i) Mark on the scale, with an **X**, the probability of selecting a Christmas card. [1 mark]



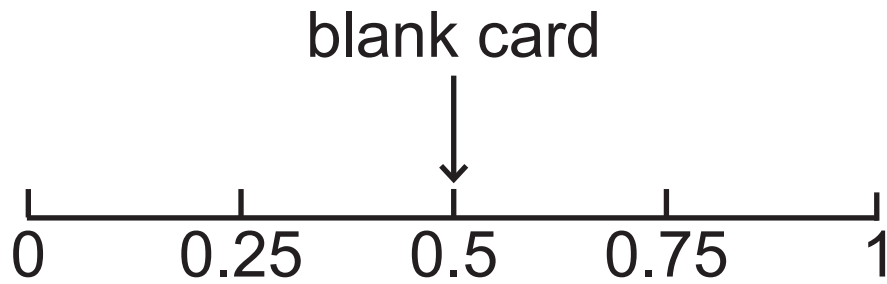
- (ii) The probability of selecting a birthday card is 0.4

Explain why the statement below is incorrect. [1 mark]

“Over half the cards in the box are birthday cards”

Answer _____

(iii) The probability of selecting a blank card is shown.



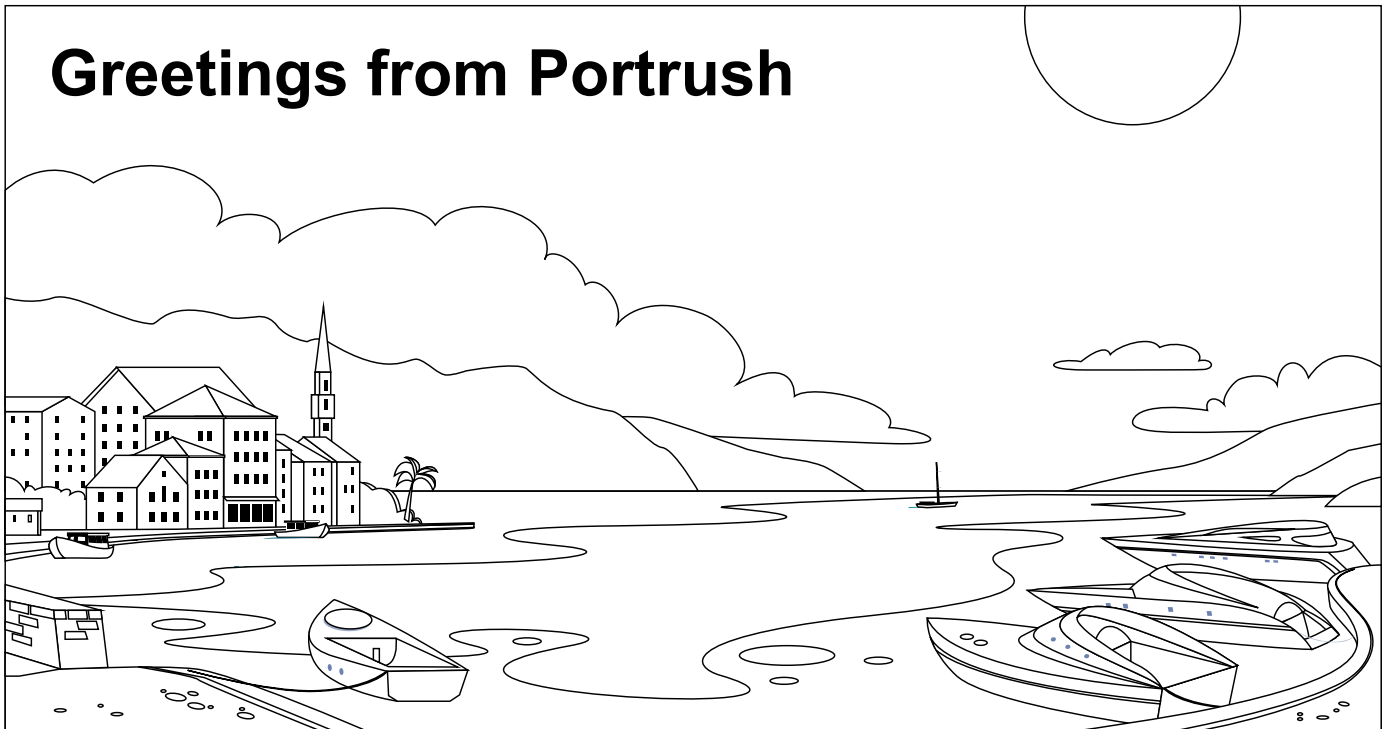
Explain why there must be an **even** number of cards in the box.

[1 mark]

Answer _____

(b) A different box contains only postcards.

30 of the postcards say “Greetings from Portrush”.



The probability of choosing a postcard at random from this box saying “Greetings from Portrush” is 0.5

How many postcards in total are in this box? [1 mark]

Answer _____

4 (a) What is the next number in the sequence? [1 mark]

5, 23, 41, 59,

Answer _____

(b) A sequence starts with 8 and uses the rule add 15

8, 23, 38, 53,

Which one of the following is **not** true for the **6th term**? [2 marks]

A It is an odd number

B It is a prime number

C It is a multiple of 7

Answer _____

5 (a) Wayne has a playlist of 30 songs on his phone.

His favourite song is in this playlist.

What is the probability that a song chosen at random from the playlist is his favourite song? [1 mark]

Give your answer as a fraction.

Answer _____

(b) Wayne deletes 5 songs from the playlist.

His favourite song is still in the playlist.

What is the probability now that a song chosen at random from the playlist is his favourite song? [1 mark]

Give your answer as a fraction.

Answer _____

- 6** 6% of pupils at Marley Middle School are 6 feet tall or taller.

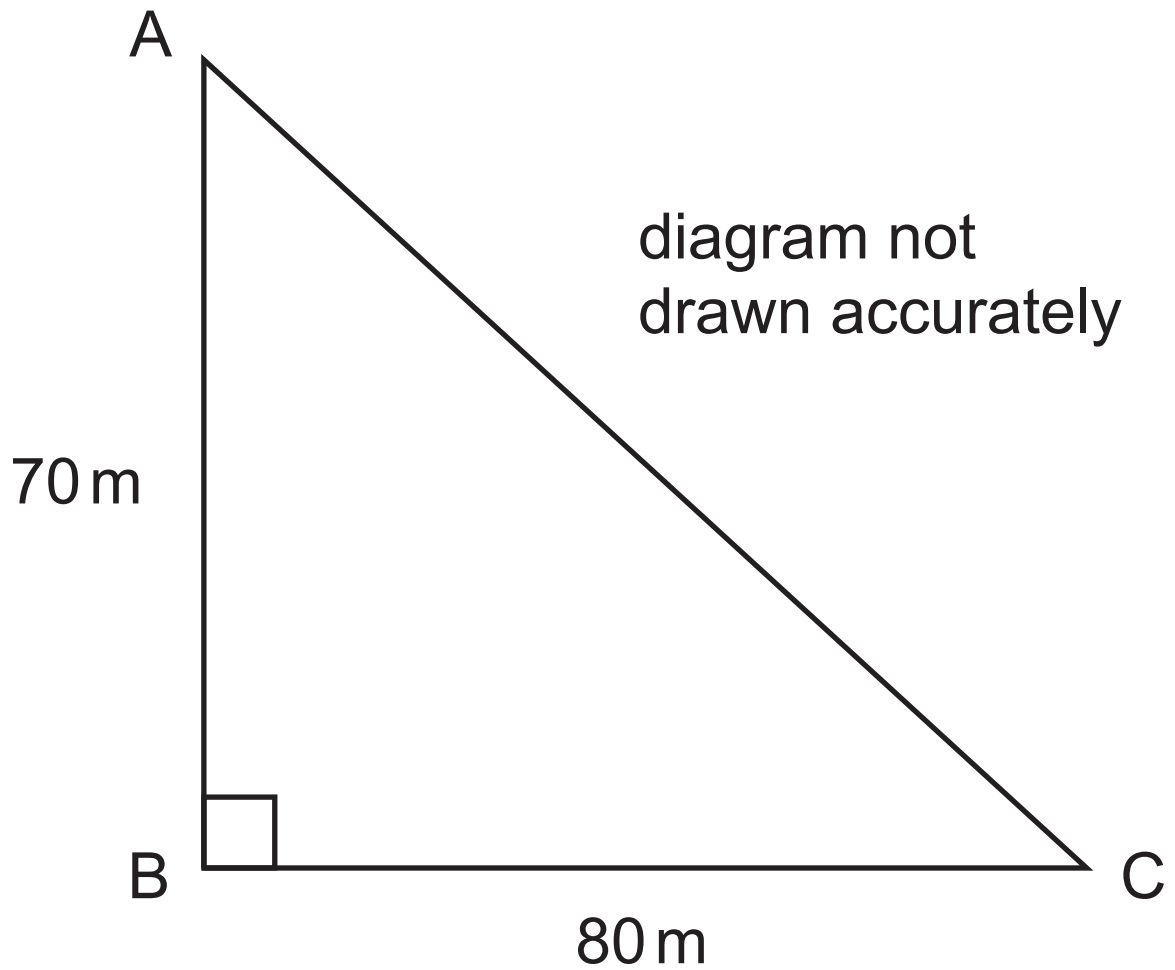
There are 700 pupils at the school.

How many pupils are **under** 6 feet tall?
[3 marks]

Answer _____

- 7 Draw a scale drawing to work out the actual length of the side AC of the triangle.
[3 marks]

Use the scale 1 cm = 10 m



Answer _____ m

8 A fair spinner has three equal sections labelled A, B and 4

It is spun twice.

(a) Complete the table to show all the possible outcomes. [2 marks]

	A	B	4
A	(A, A)		
B			
4			

(b) What is the probability of getting (4, 4)?
[1 mark]

Answer _____

9 (a) Jeff earns £72 for 4 hours of tutoring.

How much does he earn for 10 hours of tutoring? [2 marks]

Answer £ _____

(b) A shop uses the following ingredients to make an ice cream sundae.

Ice cream	3 scoops
Sprinkles	4 spoonfuls
Whipped cream	2 tablespoons

How many scoops of ice cream were used on a day when they used 24 spoonfuls of sprinkles to make sundaes?
[2 marks]

Answer _____

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(Questions continue overleaf)

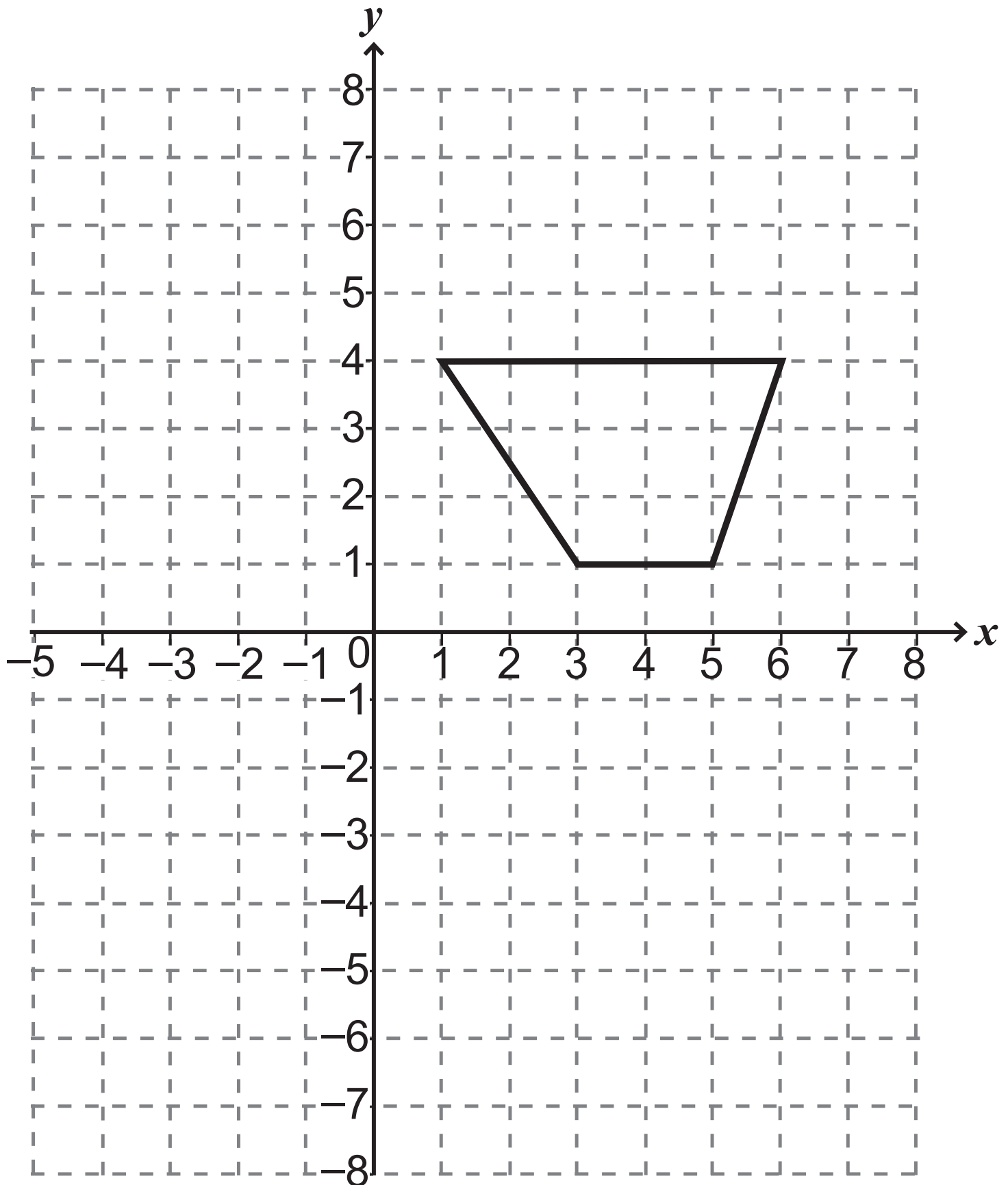
10 A café owner works out the probability of customers buying a drink with their meal.

Drink	Water	Milk	Hot drink	Other	None
Probability	0.24		0.3	0.15	0.12

What is the probability that a customer, chosen at random, buys milk? [2 marks]

Answer _____

11 Translate the shape 2 to the right and 4 down. [2 marks]



12 In a box there are bronze, silver and gold medals.

There are 21 bronze and 42 silver medals.

A medal is taken at random from the box.

The probability of taking a gold medal is $\frac{3}{10}$

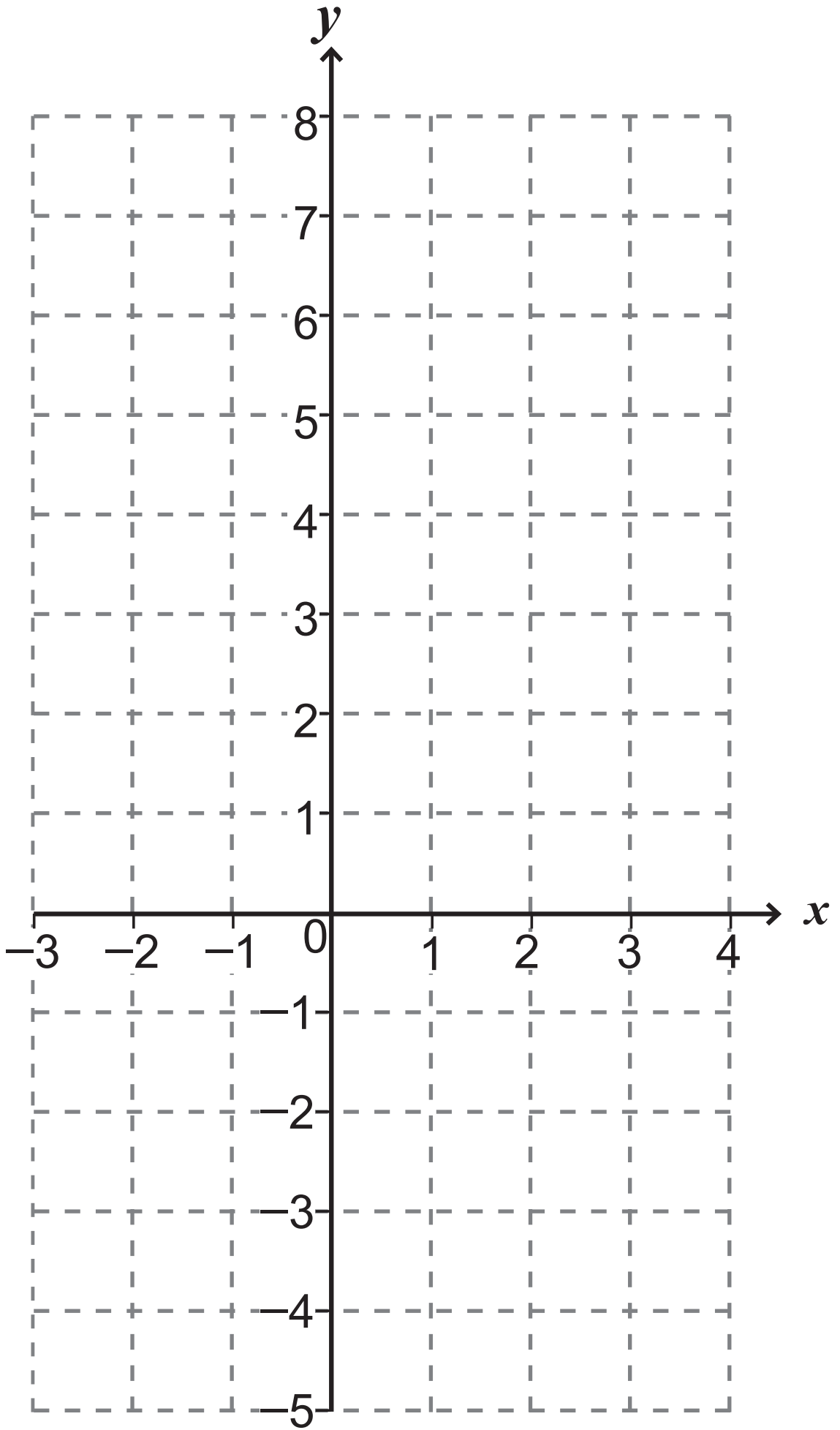
How many **gold** medals are there?
[3 marks]

Answer _____

13 (a) (i) Complete the table for $y = x^2 - x - 4$
[2 marks]

x	-3	-2	-1	0	1	2	3	4
y	8			-4	-4	-2	2	8

(ii) Hence draw the graph of
 $y = x^2 - x - 4$ on the grid opposite.
[2 marks]



(b) Use the graph to solve the equation
 $x^2 - x - 4 = 0$ [1 mark]

Answer _____

14 Each interior angle of a regular polygon is 140°

How many sides does it have? [2 marks]

Answer _____

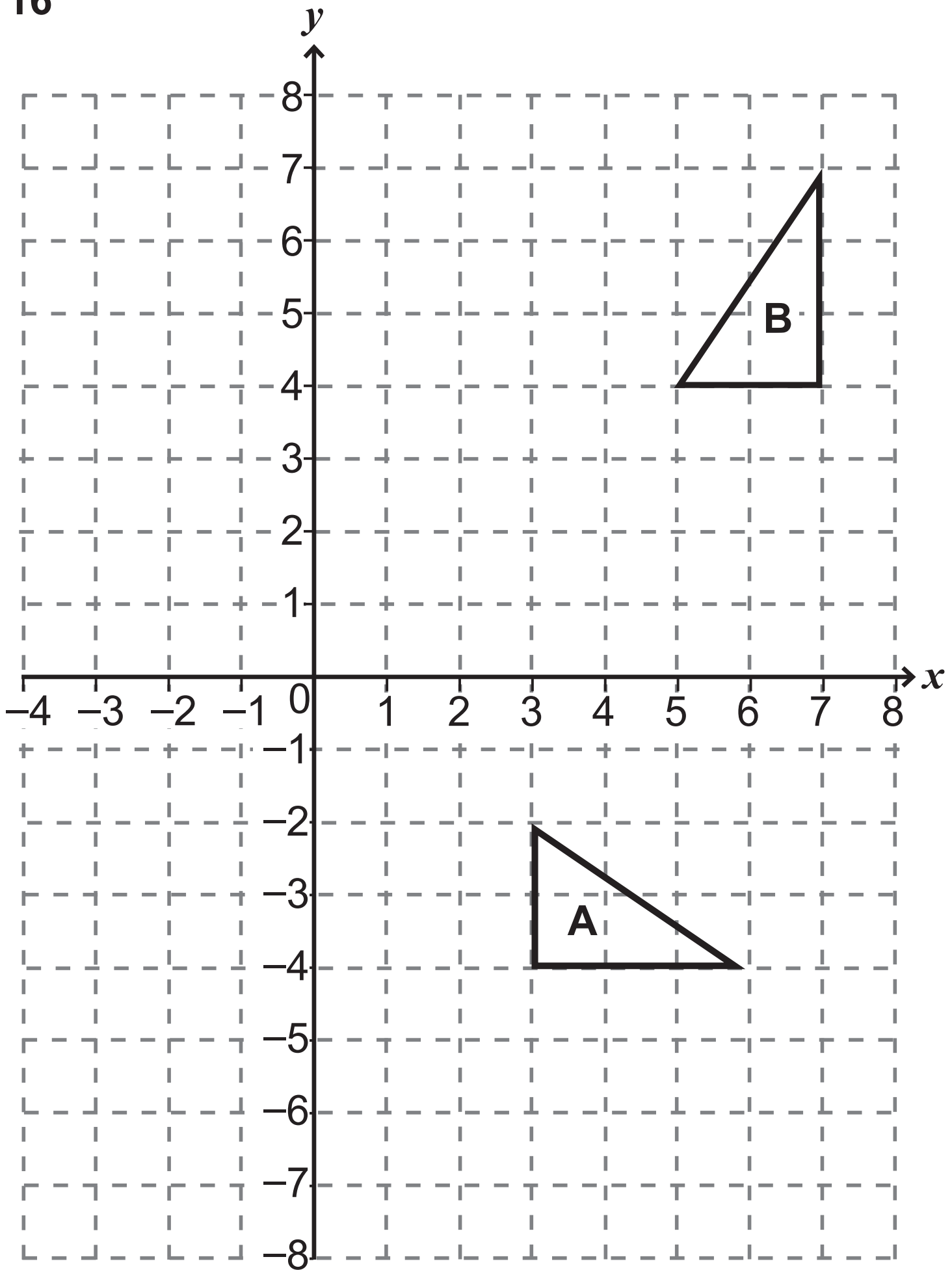
15 John spends x hours each week on homework.

Joanne spends 3 hours more than John each week on homework.

In total they spend more time on homework each week than Sam, who spends 14 hours per week on homework.

Write down an inequality and solve it for x .
[3 marks]

Answer _____



Describe fully the **single** transformation which takes triangle **A** to triangle **B**.
[3 marks]

Answer _____

**This is the end of the
question paper**

SOURCES

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For Examiner's use only	
Question Number	Marks
1	
2	
3	
4	
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16	
Total Marks	

Examiner Number

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