

Please write clearly in block capitals.

Centre number

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Candidate number

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Surname

\_\_\_\_\_

Forename(s)

\_\_\_\_\_

Candidate signature

\_\_\_\_\_

I declare this is my own work.

# GCSE MATHEMATICS

# F

Foundation Tier

Paper 1 Non-Calculator

Thursday 16 May 2024

Morning

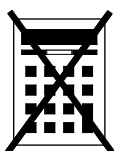
Time allowed: 1 hour 30 minutes

## Materials

For this paper you must have:

- mathematical instruments
- the Formulae Sheet (enclosed).

You must **not** use a calculator.



## Instructions

- Use black ink or black ball-point pen. Draw diagrams in pencil.
- Fill in the boxes at the top of this page.
- Answer **all** questions.
- You must answer the questions in the spaces provided. Do not write outside the box around each page or on blank pages.
- If you need extra space for your answer(s), use the lined pages at the end of this book. Write the question number against your answer(s).
- 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 more answer paper, graph paper and tracing paper. These must be tagged securely to this answer book.

## Advice

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

### For Examiner's Use

| Pages        | Mark |
|--------------|------|
| 2–3          |      |
| 4–5          |      |
| 6–7          |      |
| 8–9          |      |
| 10–11        |      |
| 12–13        |      |
| 14–15        |      |
| 16–17        |      |
| 18–19        |      |
| 20–21        |      |
| 22–23        |      |
| 24–25        |      |
| <b>TOTAL</b> |      |



J U N 2 4 8 3 0 0 1 F 0 1

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

*Do not write  
outside the  
box*

**1 (a)** Work out  $280 \div 7$

**[1 mark]**

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Answer \_\_\_\_\_

**1 (b)** Work out  $1062 - 438$

**[2 marks]**

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Answer \_\_\_\_\_



**2 (a)** Complete the statement.

**[1 mark]**

2 metres = \_\_\_\_\_ centimetres

**2 (b)** Complete the statement.

**[1 mark]**

8 kilograms = \_\_\_\_\_ grams

**2 (c)** Convert 24 kilometres to miles.

Use 8 kilometres = 5 miles

**[2 marks]**

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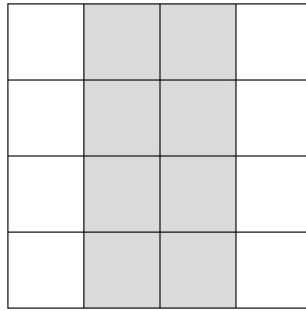
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Answer \_\_\_\_\_ miles



- 3 (a) Here is a centimetre grid.

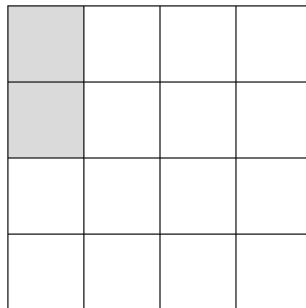


What **percentage** of the grid is shaded?

[1 mark]

Answer \_\_\_\_\_ %

- 3 (b) Kai has shaded two small squares on this centimetre grid.



He wants  $\frac{3}{4}$  of the grid to be shaded.

How many **more** small squares must he shade?

[2 marks]

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Answer \_\_\_\_\_



- 4 (a) Here is a list of four numbers.

6.92      7.27      7.18      7.14

Use **one** number from the list to complete each statement.

[2 marks]

The number closest in value to 7 is \_\_\_\_\_

The number that rounds to 7.2 to 1 decimal place is \_\_\_\_\_

- 4 (b) Here is a list of six numbers.

-10      -5      -2      4      6      10

Use **two** numbers from the list to complete each statement.

[2 marks]

Two numbers that **add** to make -1 are \_\_\_\_\_ and \_\_\_\_\_

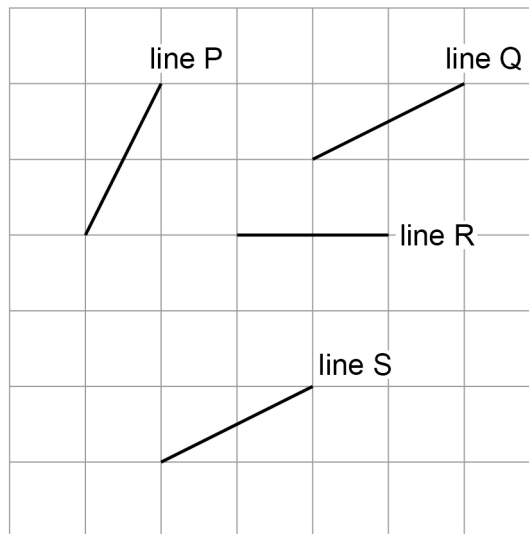
Two numbers that **multiply** to make 20 are \_\_\_\_\_ and \_\_\_\_\_

Turn over for the next question

Turn over ►



- 5 (a) Here are four lines on a square grid.

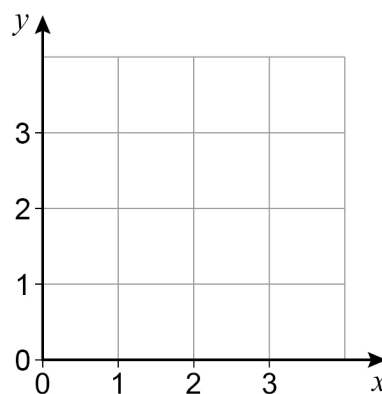


Which **two** lines are parallel?

[1 mark]

line \_\_\_\_\_ and line \_\_\_\_\_

- 5 (b) Here is a different grid.



There are **four** points on this grid that each have  
both coordinates that are whole numbers  
and  
 $x\text{-coordinate} + y\text{-coordinate} = 3$

Plot the **four** points on the grid.

[2 marks]



**6 (a)** Write down the value of  $3^2$

**[1 mark]**

Answer \_\_\_\_\_

**6 (b)** Write down the value of  $\sqrt{144}$

**[1 mark]**

Answer \_\_\_\_\_

**6 (c)** Work out the value of  $2^4$

**[1 mark]**

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Answer \_\_\_\_\_

**Turn over for the next question**



- 7 (a) At a restaurant, vegan pizzas have two **different** toppings.

The toppings are

sweetcorn (S)

mushrooms (M)

peppers (P)

Complete the table to list all the possible pairs of toppings.

[1 mark]

|    |
|----|
| SM |
|    |
|    |

- 7 (b) At the restaurant, dough balls can be ordered in small portions and large portions.

**Small portion**

6 dough balls

**Large portion**

10 dough balls

A group of people want to order **exactly** 44 dough balls.

Show how they can do this.

[2 marks]

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Number of Small portions \_\_\_\_\_

Number of Large portions \_\_\_\_\_



|         |          |
|---------|----------|
| Apples  | 25p each |
| Oranges | 60p each |

**[4 marks]**

Answer \_\_\_\_\_

7

**Turn over ►**



- 9** Alina and Sue play netball.  
The number of goals they scored in 8 games is shown.

|              |    |    |    |    |    |    |    |    |
|--------------|----|----|----|----|----|----|----|----|
| <b>Alina</b> | 12 | 15 | 17 | 17 | 21 | 22 | 24 | 26 |
| <b>Sue</b>   | 13 | 13 | 17 | 20 | 22 | 23 | 24 | 31 |

- 9 (a)** Complete this table.

**[2 marks]**

|              |              |               |
|--------------|--------------|---------------|
|              | <b>Range</b> | <b>Median</b> |
| <b>Alina</b> |              | 19            |
| <b>Sue</b>   | 18           |               |

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- 9 (b)** Which player scored the more consistent number of goals?  
Tick a box.

Alina

☐

Sue

☐

Give a reason for your answer.

**[1 mark]**

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**10**

Work out 35% of 1200

**[3 marks]**

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Answer \_\_\_\_\_

**Turn over for the next question****Turn over ►**

- 11 A window cleaner uses this formula.

$$C = 2W + 5$$

$C$  = cost, in £, for the customer

$W$  = number of windows to be cleaned

- 11 (a) How much does it cost for 6 windows to be cleaned?

[2 marks]

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Answer £ \_\_\_\_\_

- 11 (b) The cost for another customer was £24

Show why this cost **must** be incorrect.

[1 mark]

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**12** Two bags, X and Y, each contain coloured discs.

In bag X,  $\frac{7}{20}$  of the discs are red.

In bag Y,  $\frac{2}{5}$  of the discs are red.

Which bag has the **greater** proportion of red discs, X or Y?

You **must** show your working.

**[2 marks]**

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Answer \_\_\_\_\_

**Turn over for the next question**



- 13 (a)** Two friends share £240 in the ratio 1 : 3

Work out the larger share.

**[2 marks]**

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Answer £ \_\_\_\_\_

- 13 (b)** A tennis player wins or loses matches in the ratio win : lose = 5 : 9

What fraction of the matches do they win?

**[1 mark]**

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Answer \_\_\_\_\_



**14** Here is a multiplication table.

| ×  | 61   | 63   | 65   | 67   |
|----|------|------|------|------|
| 61 | 3721 | 3843 | 3965 | 4087 |
| 63 | 3843 | 3969 | 4095 | 4221 |
| 65 | 3965 | 4095 | 4225 | 4355 |
| 67 | 4087 | 4221 | 4355 | 4489 |

Use the table to answer the following questions.

**14 (a)** Work out  $3843 \div 63$

**[1 mark]**

Answer \_\_\_\_\_

**14 (b)** Work out  $6.1 \times 6.7$

**[1 mark]**

Answer \_\_\_\_\_

**14 (c)** Work out  $63 \times 66$

**[2 marks]**

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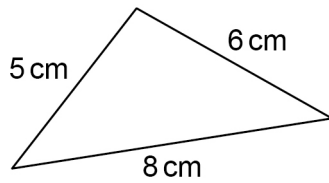
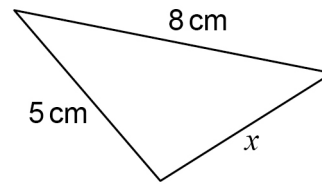
Answer \_\_\_\_\_

|   |
|---|
| 7 |
|---|

Turn over ►



15

These two triangles are **congruent**.Not drawn  
accuratelyWrite down the value of  $x$ .

[1 mark]

 $x =$  \_\_\_\_\_ cm

16

 $c$  and  $d$  are positive numbers. $c$  is even. $d$  is odd.

Tick a box for each expression.

[3 marks]

|               | Even                     | Odd                      | Cannot tell              |
|---------------|--------------------------|--------------------------|--------------------------|
| $c + d$       | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| $4c$          | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| $\frac{c}{2}$ | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |



17

A linear sequence has

- 1st term = 10
- 1st term + 2nd term = 39

Work out the 5th term.

**[4 marks]**


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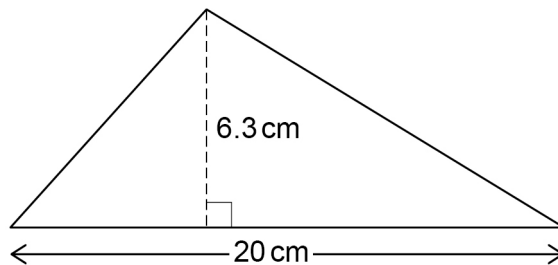
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Answer \_\_\_\_\_

18

Not drawn  
accurately

Work out the area of this triangle.

**[2 marks]**


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Answer \_\_\_\_\_  $\text{cm}^2$ 

- 19** The vector  $\begin{pmatrix} -3 \\ 7 \end{pmatrix}$  translates A to B.

Write down the vector that translates B to A.

**[1 mark]**

Answer  $\begin{pmatrix} \phantom{0} \\ \phantom{0} \end{pmatrix}$

- 20** The attendance for a rugby match is 8400 people to the nearest 100

- 20 (a)** Write down the minimum possible attendance.

**[1 mark]**

Answer \_\_\_\_\_

- 20 (b)** Write down the maximum possible attendance.

**[1 mark]**

Answer \_\_\_\_\_



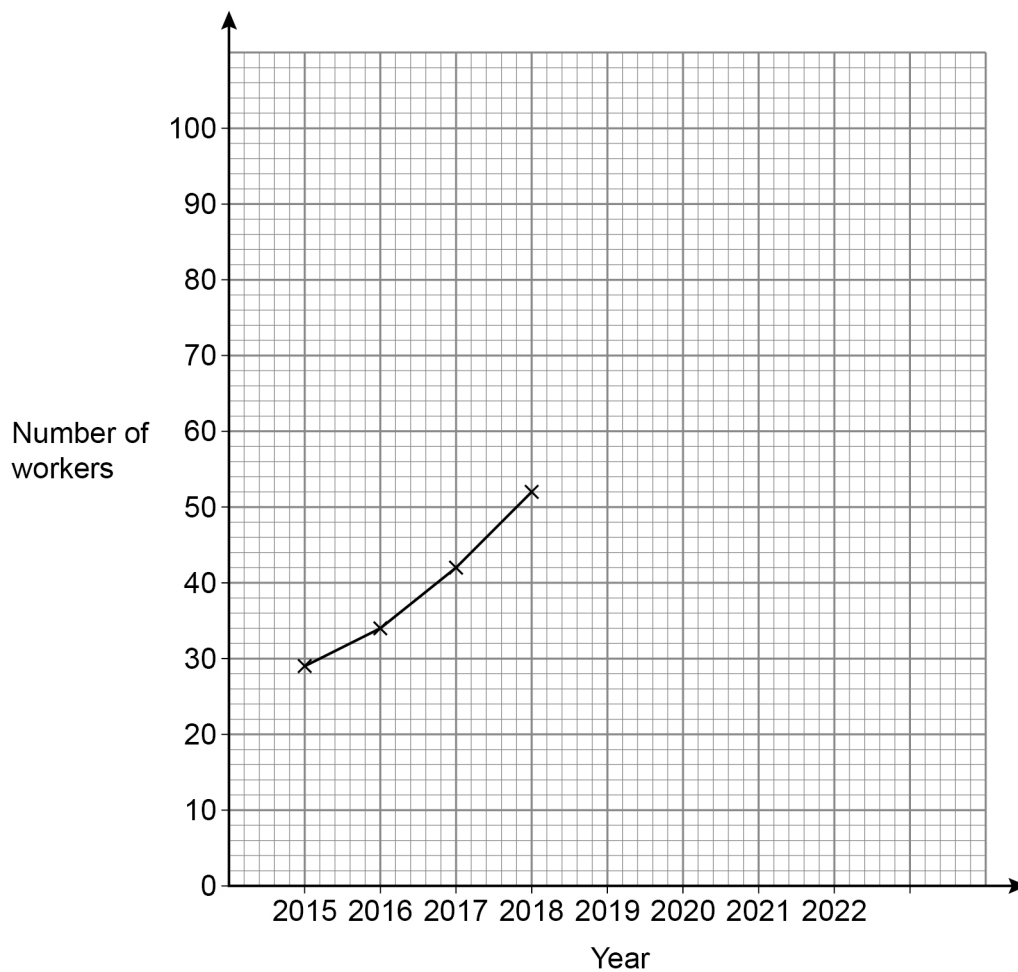
21

The table shows the number of workers at a company in different years.

| Year              | 2015 | 2016 | 2017 | 2018 | 2019 | 2020 | 2021 | 2022 |
|-------------------|------|------|------|------|------|------|------|------|
| Number of workers | 29   | 34   | 42   | 52   | 62   | 70   | 76   | 80   |

A time-series graph is drawn to represent the data.

The first four points have been plotted.



21 (a) Complete the graph.

[2 marks]

21 (b) Estimate the number of workers at the company in 2023.

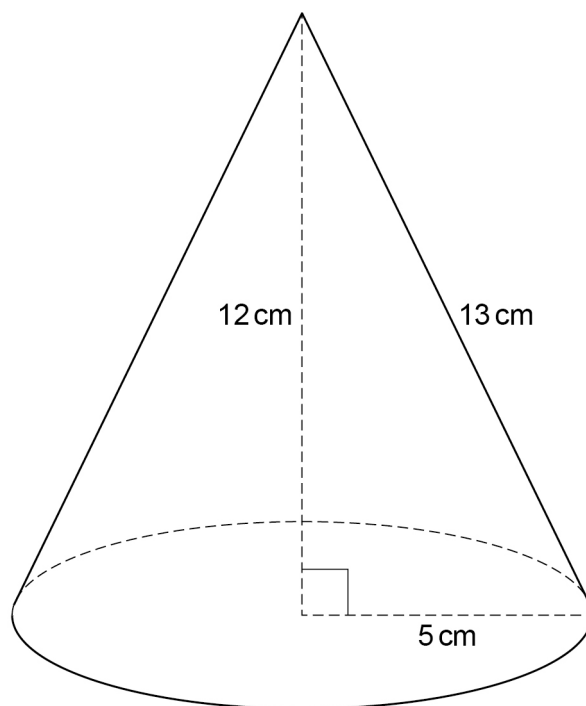
[1 mark]

Answer \_\_\_\_\_



22

Here is a cone.

Do not write  
outside the  
box

22 (a)

Curved surface area of a cone =  $\pi r l$   
 where  $r$  is the radius and  $l$  is the slant height

Beth tries to work out the curved surface area in terms of  $\pi$

Curved surface area of the cone =  $\pi \times 5 \times 12$   
 $= 60\pi \text{ cm}^2$

What mistake has she made?

[1 mark]

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**22 (b)** Adam uses  $\pi = 3$  to estimate the area of the **base** of the cone.

Work out his estimate.

**[2 marks]**

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Answer \_\_\_\_\_  $\text{cm}^2$

**22 (c)** Beth uses  $\pi = 3.14$  to estimate the area of the **base** of the cone.

Is Beth's estimate more than or less than Adam's estimate?

Tick a box.

More than

☐

Less than

☐

Give a reason for your answer.

**[1 mark]**

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**Turn over for the next question**



**23**

Each day, Erik drinks

 $\frac{1}{4}$  of a pint of milk in the morning

and

 $\frac{1}{2}$  of a pint of milk in the afternoon.

How many pints of milk does he drink in 30 days?

**[3 marks]**

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Answer \_\_\_\_\_



24 Solve  $7x - 22 = 4x + 29$

[3 marks]

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$x =$  \_\_\_\_\_

25 In a house

the floor area of the living room is  $26 \text{ m}^2$

the floor area of the kitchen is  $16.4 \text{ m}^2$

Express the area of the living room as a fraction of the area of the kitchen.

Give your answer in its simplest form.

[3 marks]

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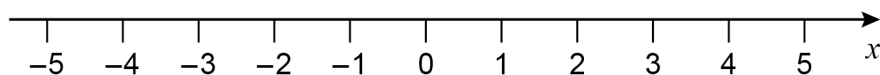
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Answer \_\_\_\_\_



**26 (a)** Represent  $-2 < x < 4$  on the number line.

**[1 mark]**



**26 (b)** Solve  $5y + 14 \geq 11$

**[2 marks]**

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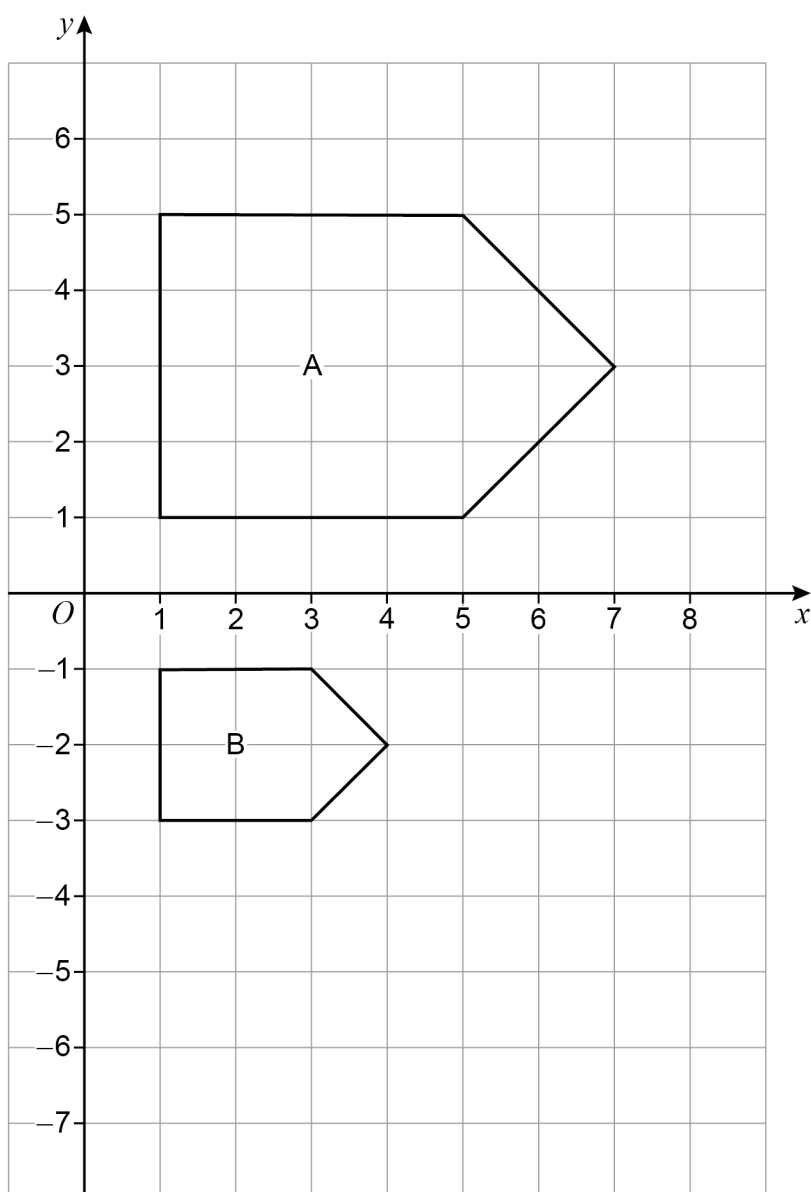
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Answer \_\_\_\_\_



27

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Describe fully the **single** transformation that maps shape A to shape B.

[3 marks]

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END OF QUESTIONS



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ANSWER IN THE SPACES PROVIDED**



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| Question number | <b>Additional page, if required.</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
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|                 | <p style="text-align: center;"><b>Write the question numbers in the left-hand margin.</b></p> <hr/> <hr/> <hr/> <hr/> <hr/> <hr/> <hr/> <hr/> <hr/> <hr/> <hr/> <hr/> <hr/> <hr/> <hr/> <hr/> <hr/> <hr/> <hr/> <hr/>                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
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