Surname _____

Forename(s) _____

Centre Number _____

Candidate Number _____

Candidate Signature _____

I declare this is my own work.

GCSE

MATHEMATICS

F

Foundation Tier Paper 1 Non-Calculator

8300/1F

Thursday 16 May 2024 Morning

Time allowed: 1 hour 30 minutes

[Turn over]

JUN248300 1F 01

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On the front of this book, write your surname and forename(s), your centre number, your candidate number and add your signature.

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.**
- **Answer ALL questions.**

[Turn over]

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

DO NOT TURN OVER UNTIL TOLD TO DO SO

Answer ALL questions in the spaces provided.

1(a) Work out 280 ÷ 7 [1 mark]

Answer

1(b) Work out 1062 – 438 [2 marks]

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]

Answer _____ **miles**

7

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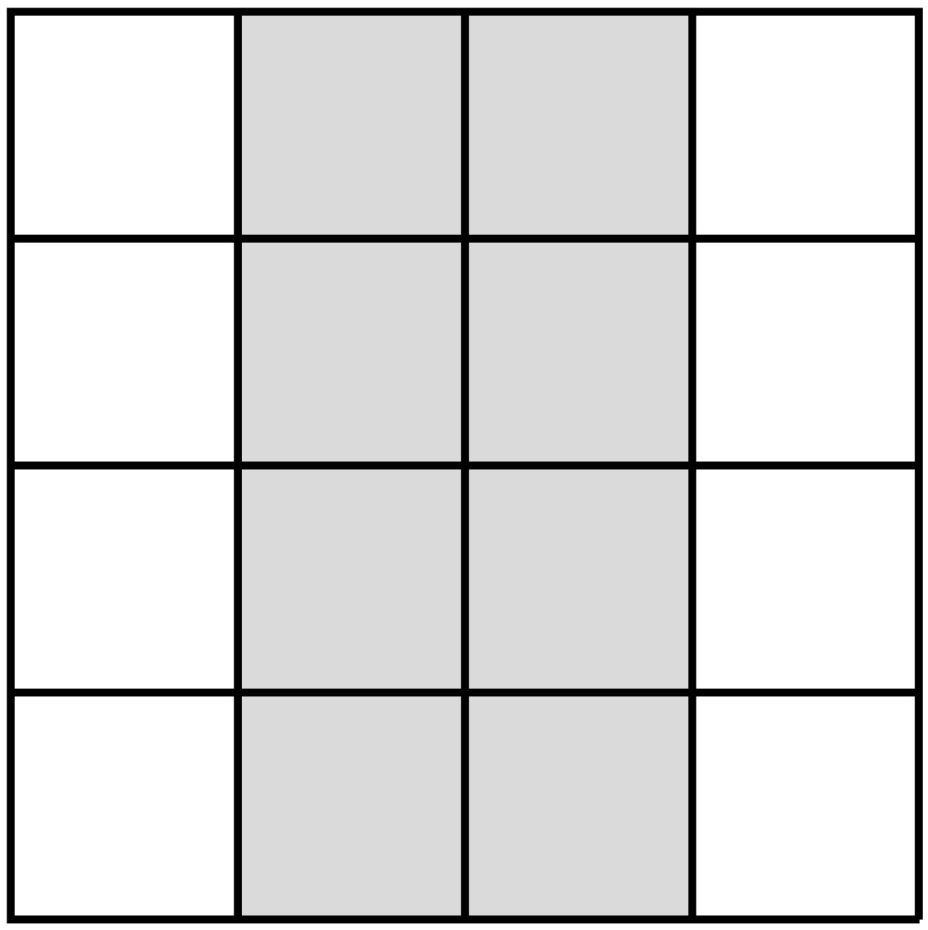
3(a) **Here is a grid.**

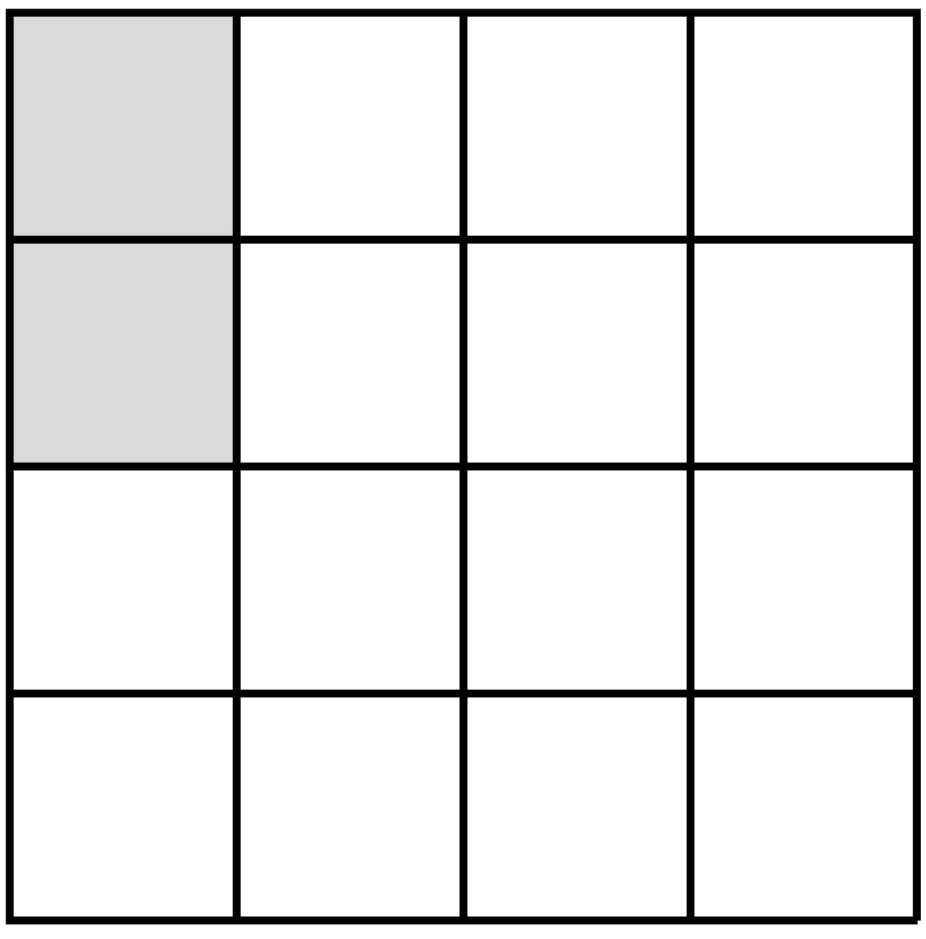


What PERCENTAGE of the grid is shaded? [1 mark]

Answer _____ **%**

[Turn over]

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



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

How many MORE small squares must he shade? [2 marks]

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

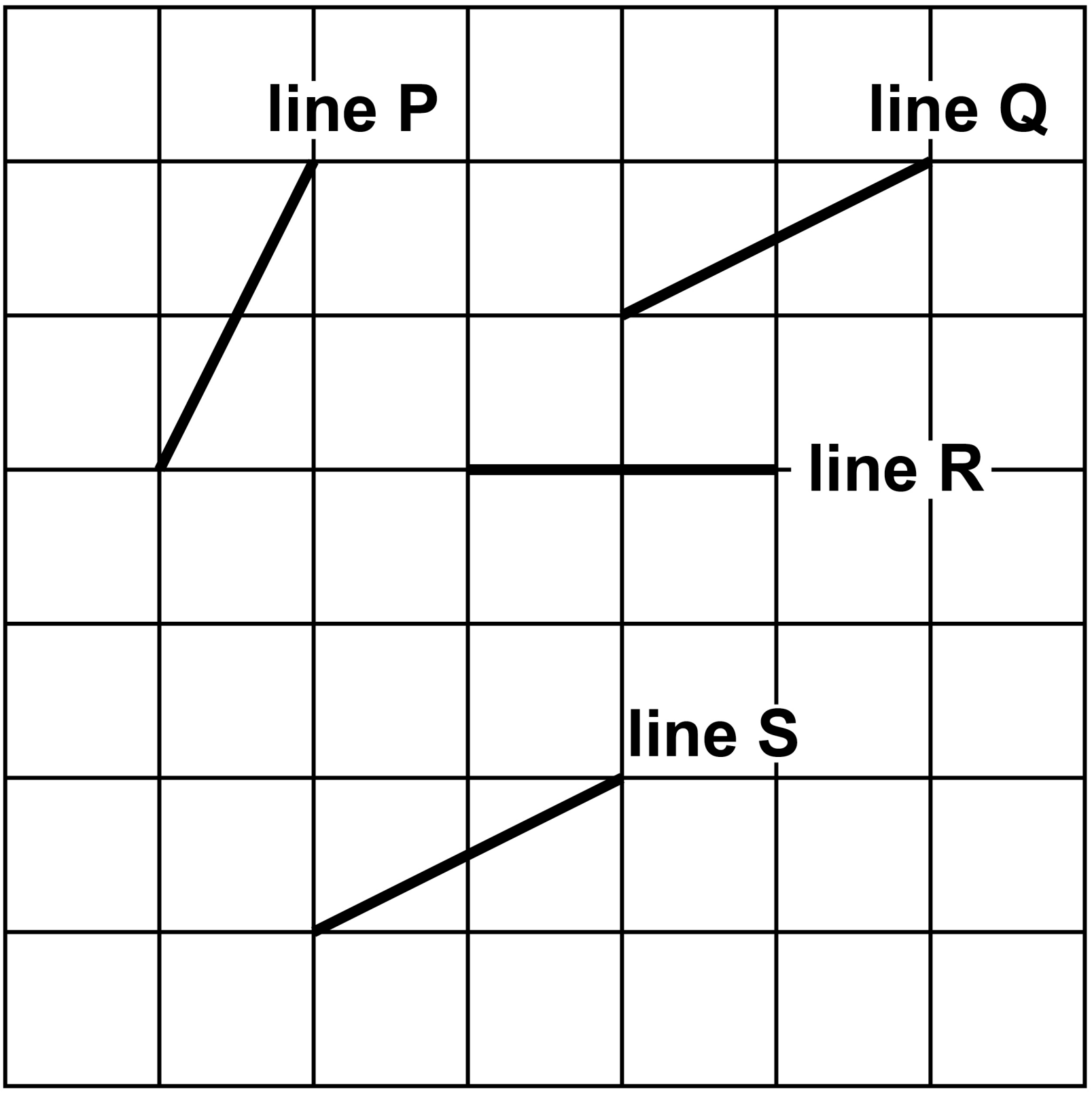
_____ and _____

Two numbers that MULTIPLY to make 20 are

_____ and _____

7

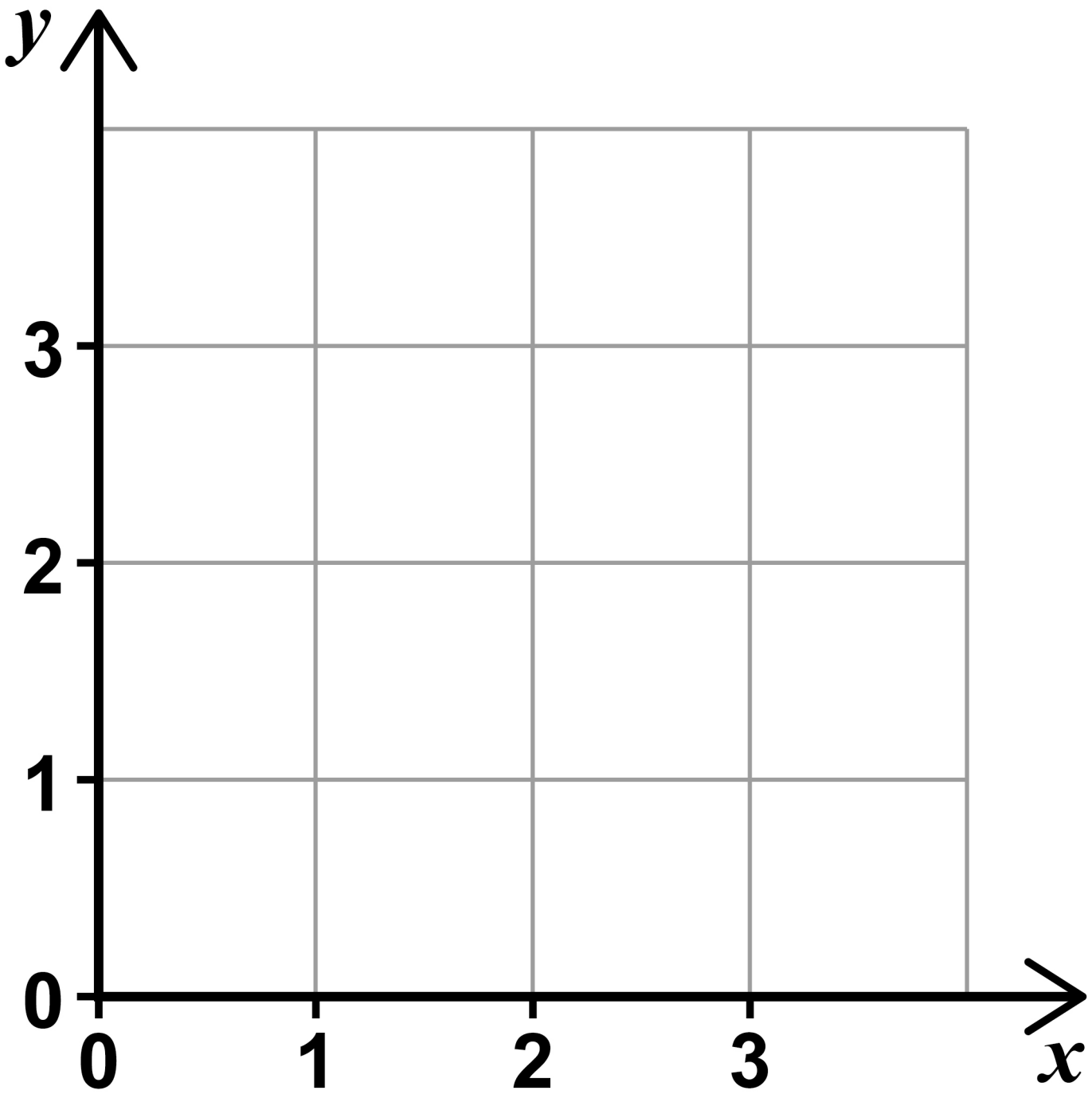
5(a) **Here are four lines on a square grid.**



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-coordinate + y-coordinate = 3

Plot the FOUR points on the grid.
[2 marks]

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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]

_____

_____

_____

_____

Answer _____

6

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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]

Number of Small portions

Number of Large portions

[Turn over]

8

Apples	25p each
Oranges	60p each

Salma has £10 to buy apples and oranges.

She buys

9 apples

and

as many oranges as possible.

How many oranges does she buy?
[4 marks]

Answer _____

7

9 Alina and Sue play netball.

The number of goals they scored in 8 games is shown.

ALINA

12	15	17	17	21	22	24	26

SUE

13	13	17	20	22	23	24	31

9(a) **Complete this table. [2 marks]**

	RANGE	MEDIAN
ALINA		19
SUE	18	

9(b) Which player scored the more consistent number of goals?

Tick a box.

☐ Alina

☐ Sue

Give a reason for your answer.
[1 mark]

_____

_____

_____

10 Work out 35% of 1200 [3 marks]

Answer

6

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]

Answer £ _____

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

Show why this cost MUST be incorrect. [1 mark]

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]

Answer _____

5

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[Turn over]

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

Work out the larger share.
[2 marks]

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]

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 ÷ 63 [1 mark]

Answer _____

14 (b) Work out 6.1 × 6.7 [1 mark]

Answer _____

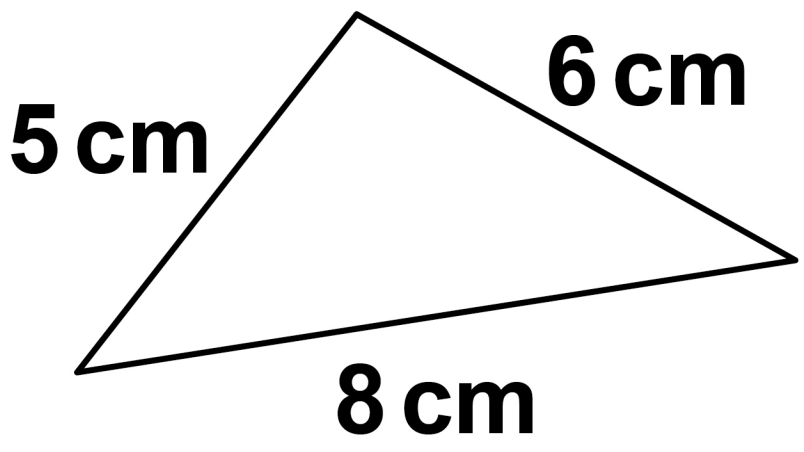
14 (c) Work out 63×66 [2 marks]

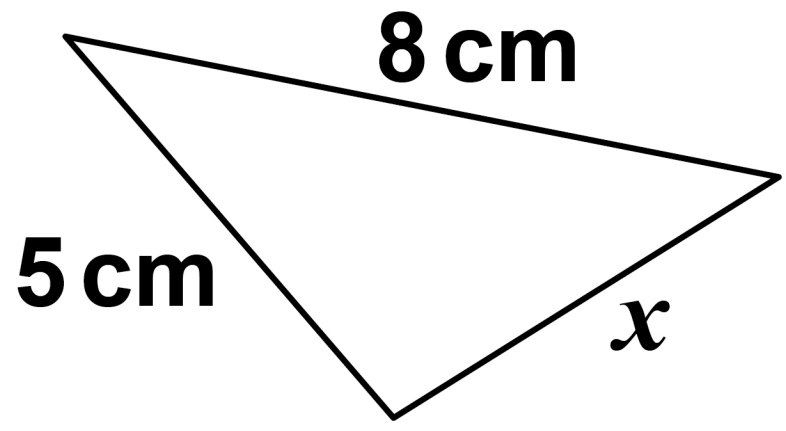
Answer _____

7

15 **These two triangles are CONGRUENT.**

The diagrams are not drawn accurately.





Write 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
$c + d$	☐	☐	☐
$4c$	☐	☐	☐
$\frac{c}{2}$	☐	☐	☐

[Turn over]

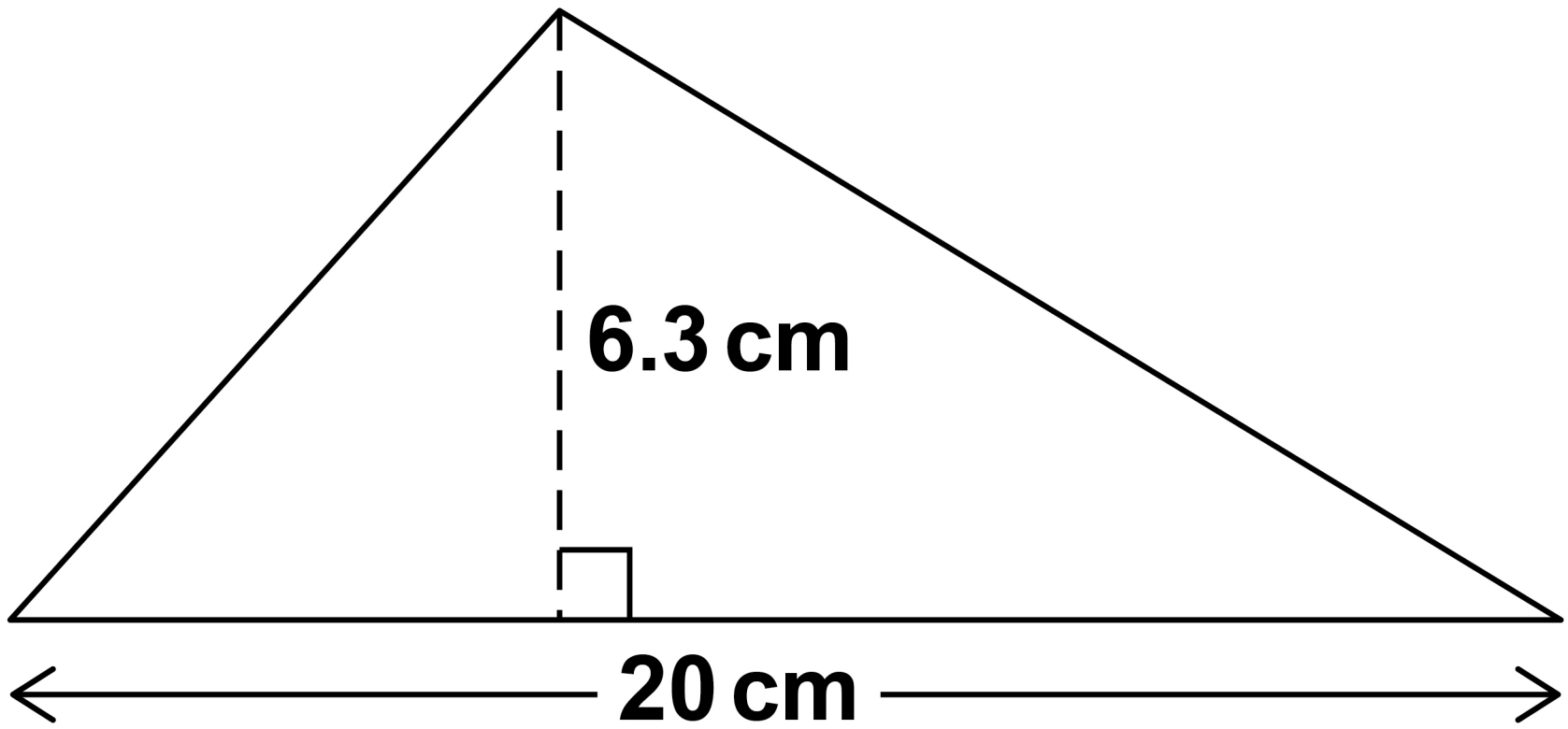
17 A linear sequence has

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

Work out the 5th term. [4 marks]

Answer

18 The diagram is not drawn accurately.



Work out the area of this triangle.
[2 marks]

Answer _____ **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 $\begin{pmatrix} \quad \\ \quad \end{pmatrix}$

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 _____

[Turn over]

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

YEAR	NUMBER OF WORKERS
2015	29
2016	34
2017	42
2018	52
2019	62
2020	70
2021	76
2022	80

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[Turn over]

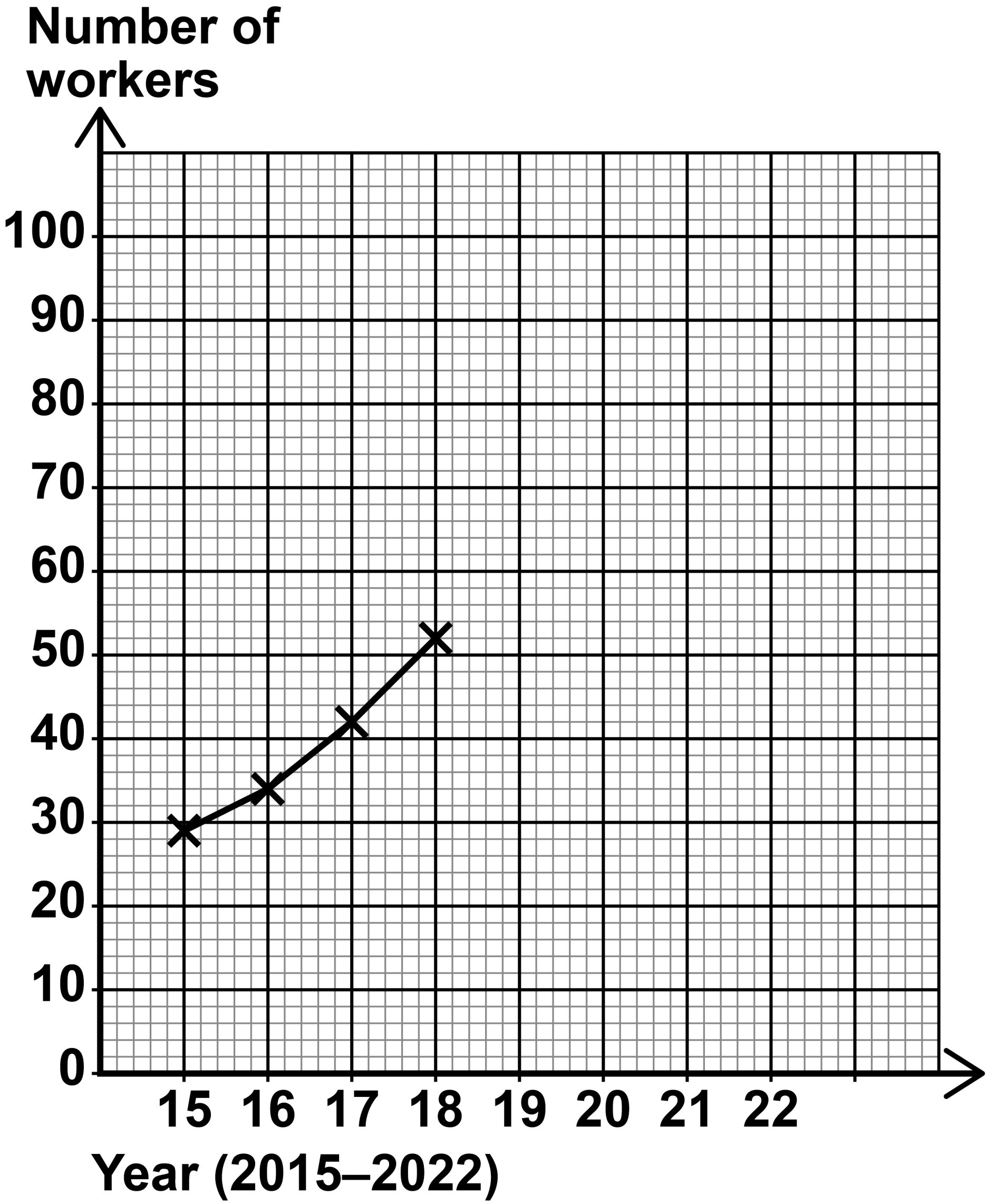
A time-series graph, on the opposite page, is drawn to represent the data given in the table on page 46.

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]

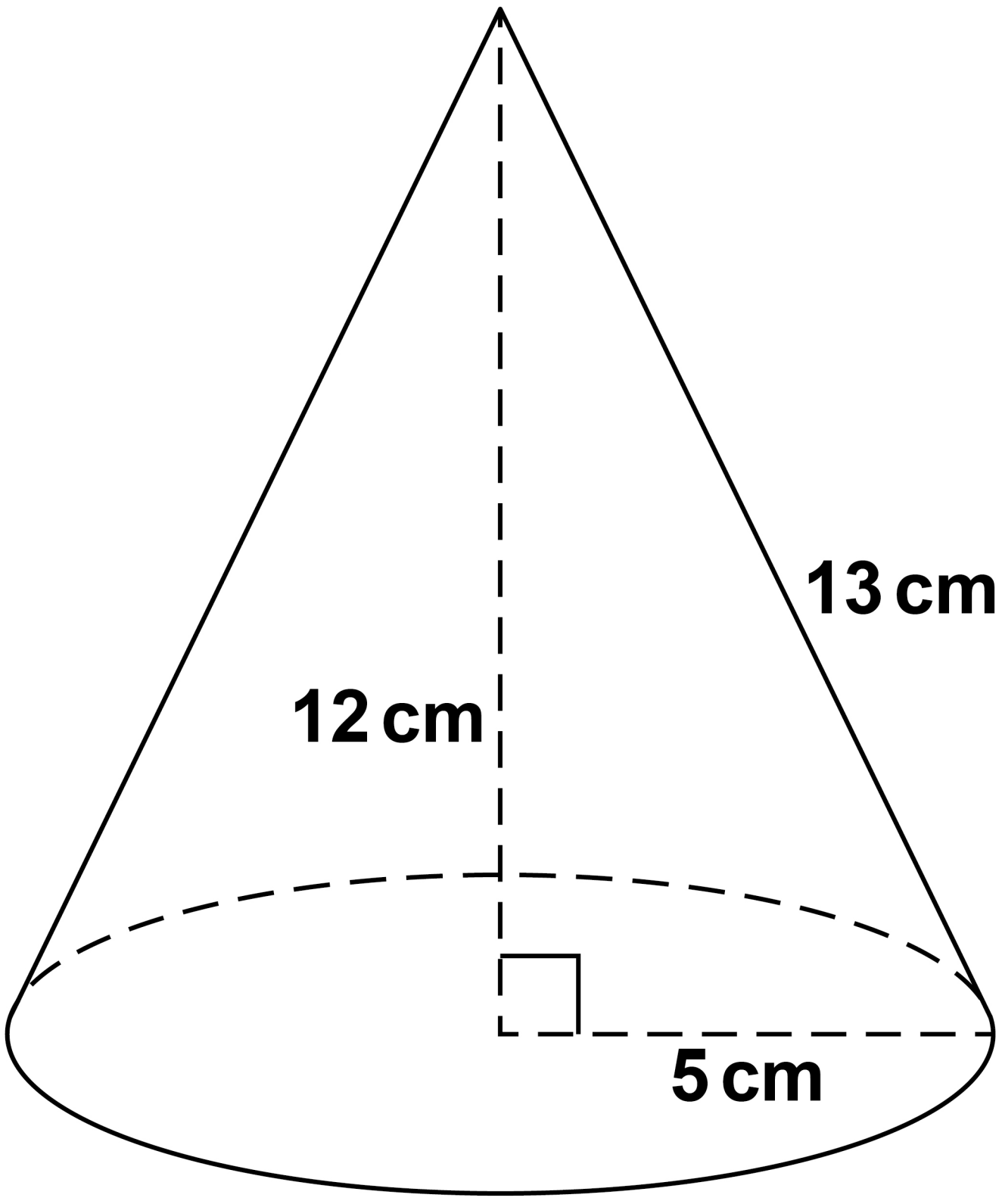
Answer _____


Number of workers
100
90
80
70
60
50
40
30
20
10
0
15
16
17
18
19
20
21
22
Year (2015–2022)

[Turn over]

6

22 **Here is a cone.**



22 (a) Curved surface area of a cone = πrl

where r is the radius and l is the slant height

Beth tries to work out the curved surface area in terms of π

Curved surface area of the cone

$= \pi \times 5 \times 12$

$= 60\pi$ cm^2

What mistake has she made?
[1 mark]

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

Work out his estimate. [2 marks]

Answer _____ 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]

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]

Answer

24 Solve $7x - 22 = 4x + 29$ [3 marks]

$x =$

[Turn over]

25 **In a house**

the floor area of the living room is 26 m^2

the floor area of the kitchen is 16.4 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]

Answer _____

[Turn over]

9

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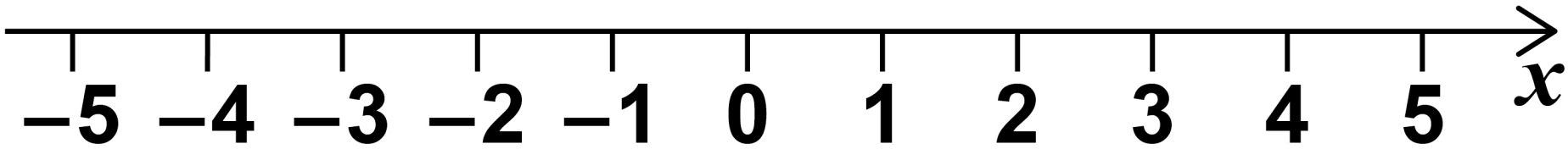
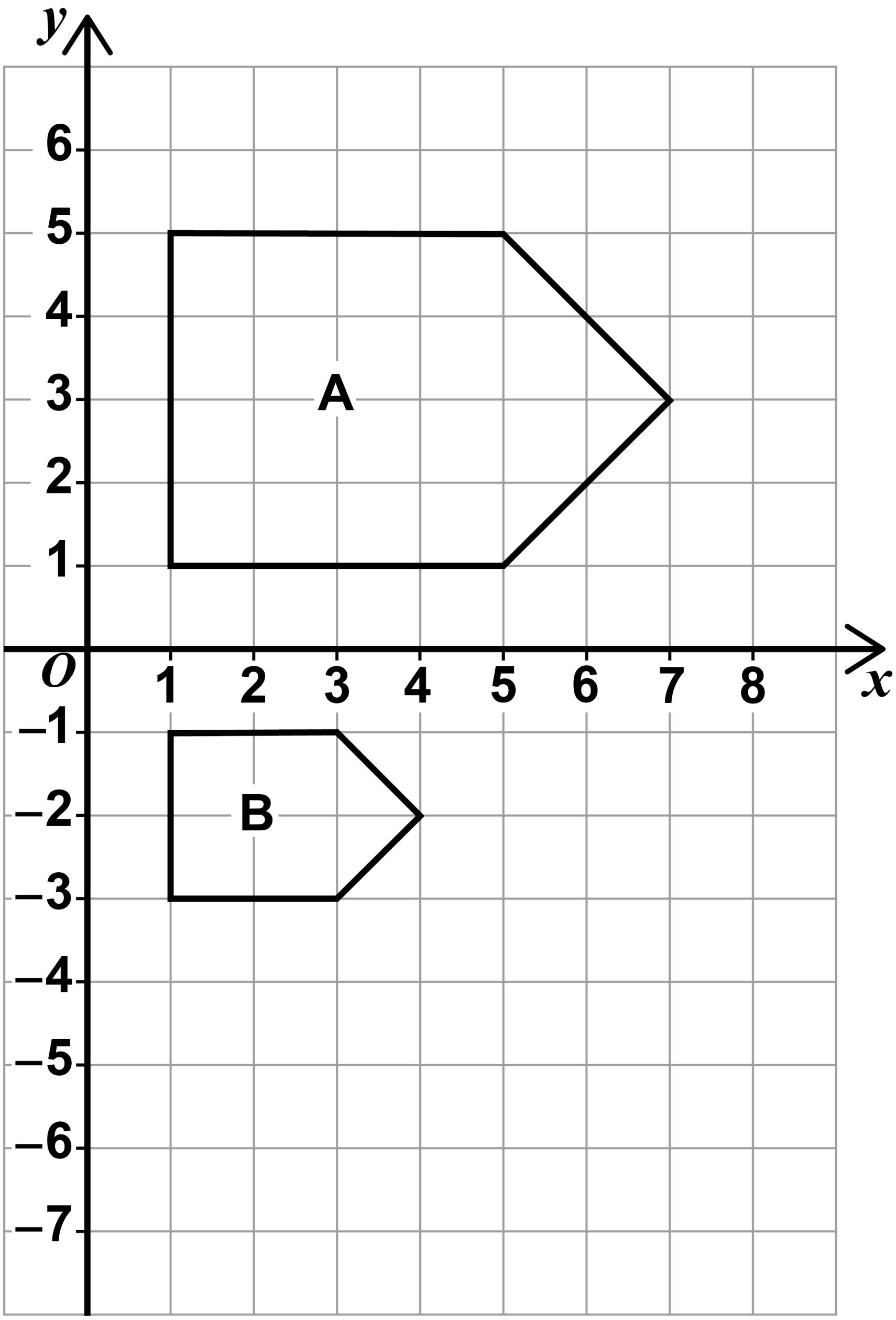
26 (a) Represent $-2 < x < 4$ on the number line. [1 mark]



26 (b) Solve $5y + 14 \geqslant 11$ [2 marks]

Answer _____

27



Describe fully the SINGLE transformation that maps shape A to shape B. [3 marks]

END OF QUESTIONS

6

Additional page, if required.

Write the question numbers in the left-hand margin.

Additional page, if required.

Write the question numbers in the left-hand margin.

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For Examiner's Use	
Pages	Mark
6–9	
11–15	
16–21	
23–27	
28–31	
32–34	
36–39	
40–43	
44–49	
50–53	
54–57	
59–61	
TOTAL	