



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

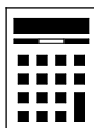
Foundation Tier Paper 3 Calculator

Wednesday 11 June 2025 Morning Time allowed: 1 hour 30 minutes

## Materials

For this paper you must have:

- a calculator
- mathematical instruments
- the Formulae Sheet (enclosed).



## 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> |      |



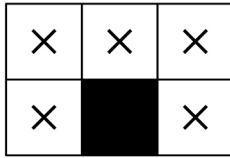
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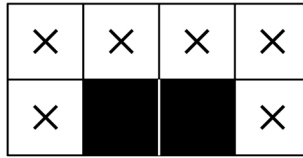
8300/3F

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

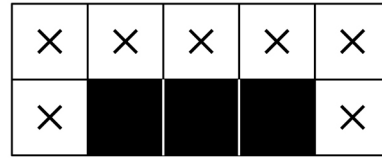
- 1** Here are the first three patterns in a sequence.



**Pattern 1**



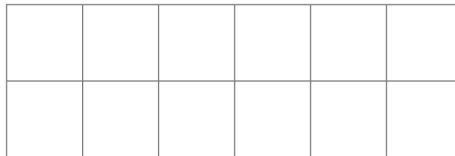
**Pattern 2**



**Pattern 3**

- 1 (a)** Draw Pattern 4 on the grid.

**[1 mark]**



- 1 (b)** How many squares in Pattern 6 would have a cross (X) in them?

**[2 marks]**

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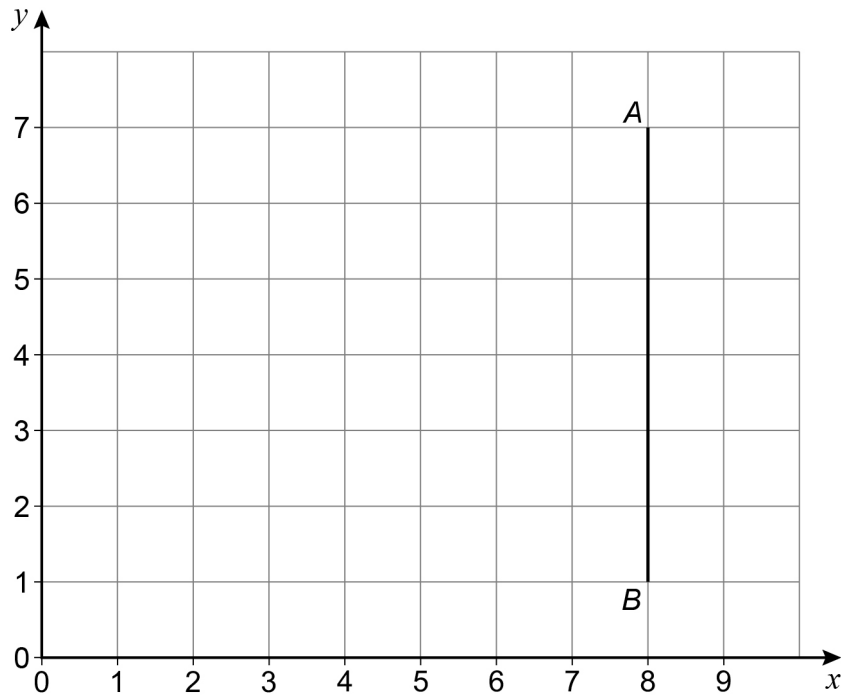


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Answer \_\_\_\_\_



**2** Line  $AB$  is on a grid.



**2 (a)** Write down the coordinates of  $B$ .

**[1 mark]**

Answer ( \_\_\_\_\_ , \_\_\_\_\_ )

**2 (b)** Write down the coordinates of the midpoint of the line  $AB$ .

**[1 mark]**

Answer ( \_\_\_\_\_ , \_\_\_\_\_ )



- 3 (a)** Jodie makes a sandwich using one type of bread and one filling.

| Bread                        | Filling                                       |
|------------------------------|-----------------------------------------------|
| White (W)<br>or<br>Brown (B) | Cheese (C)<br>or<br>Ham (H)<br>or<br>Tuna (T) |

Complete the table of the 6 possible sandwiches they could make.  
One has been done for you.

**[2 marks]**

|    |
|----|
| WC |
|    |
|    |
|    |
|    |
|    |

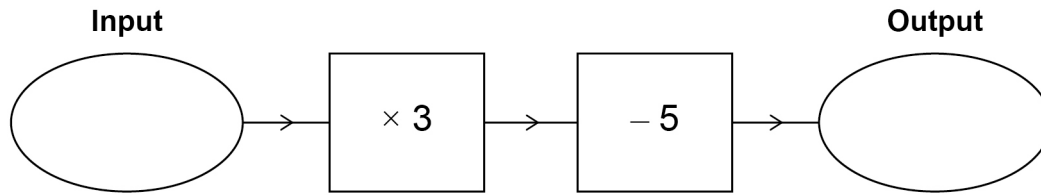
- 3 (b)** What **fraction** of the possible sandwiches use Cheese?

**[1 mark]**

Answer \_\_\_\_\_



- 4 Here is a number machine.



- 4 (a) Work out the **output** when the input is 4

[1 mark]

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Answer \_\_\_\_\_

- 4 (b) Work out the **input** when the output is 19

[2 marks]

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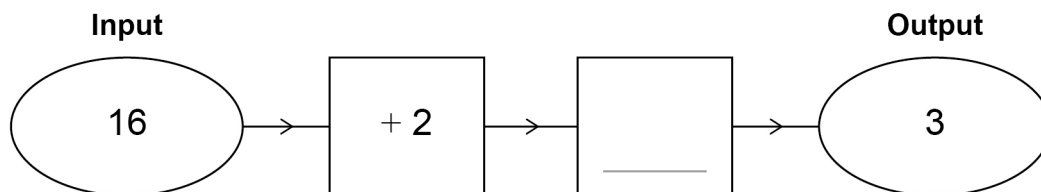


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Answer \_\_\_\_\_

- 4 (c) Complete this number machine.

[1 mark]




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Turn over ►



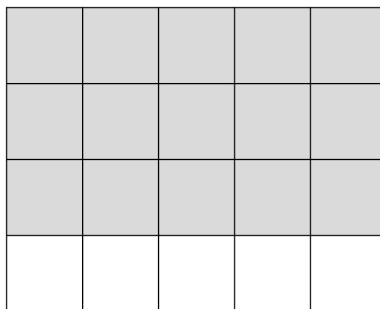
- 5 (a) Complete the table to show equivalent fractions, decimals and percentages.

[3 marks]

| Fraction       | Decimal | Percentage |
|----------------|---------|------------|
|                | 0.5     | 50%        |
| $\frac{1}{10}$ |         | 10%        |
| $\frac{2}{5}$  | 0.4     |            |

- 5 (b) What **percentage** of this grid is shaded?

[1 mark]



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



6

Which metric unit would be **most** suitable for each measurement?Tick **one** box for each.**[3 marks]**

|                               | centimetres<br>(cm)      | metres<br>(m)            | kilometres<br>(km)       |
|-------------------------------|--------------------------|--------------------------|--------------------------|
| Distance between two villages | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| Length of a pencil            | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| Height of a building          | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |

Turn over for the next question

Turn over ►



- 7 A mobile phone company has two different plans.

| Plan A                      | Plan B                      |
|-----------------------------|-----------------------------|
| Phone £500                  | Phone is free               |
| <b>plus</b>                 | <b>plus</b>                 |
| £11 per month for 24 months | £35 per month for 24 months |

- 7 (a) Show that the **total** cost of Plan A for 24 months is £764

[2 marks]

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- 7 (b) During a sale, the **total** cost of Plan B is reduced by 10%

Which plan is cheaper for 24 months during the sale?

Tick a box.

☐

Plan A

☐

Plan B

Show working to support your answer.

[3 marks]

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8

One burger costs £3.80

**Two** burgers and **three** hotdogs cost £15.85Work out the cost of **one** hot dog.**[3 marks]**

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Answer £ \_\_\_\_\_

**Turn over for the next question****8****Turn over ►**

- 9 (a) The square of a **whole** number is a two-digit number.

Work out

the **smallest** number that could have been squared

and

the **largest** number that could have been squared.

[3 marks]

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smallest \_\_\_\_\_

largest \_\_\_\_\_

- 9 (b) Which has the **larger** value  $0.8^2$  or  $0.8^3$ ?

Tick a box.

$0.8^2$

☐

$0.8^3$

☐

Give a reason for your answer.

[1 mark]

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- 10 (a)** £4.56 is paid using the smallest possible number of coins.

What is the **modal value** of the coins used?

You **must** show your working.

**[2 marks]**

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Answer \_\_\_\_\_

- 10 (b)** Here is a list of five numbers.

5      9      4      16      8

An extra number is put into the list.

The **median** of the numbers is now 7

Work out the extra number.

**[2 marks]**

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Answer \_\_\_\_\_



11

Paul buys plates for his cafe.

The cafe has 20 tables.

He buys 6 plates for each table plus an extra 70% for spares.

Work out how many plates Paul buys in **total**.

**[3 marks]**

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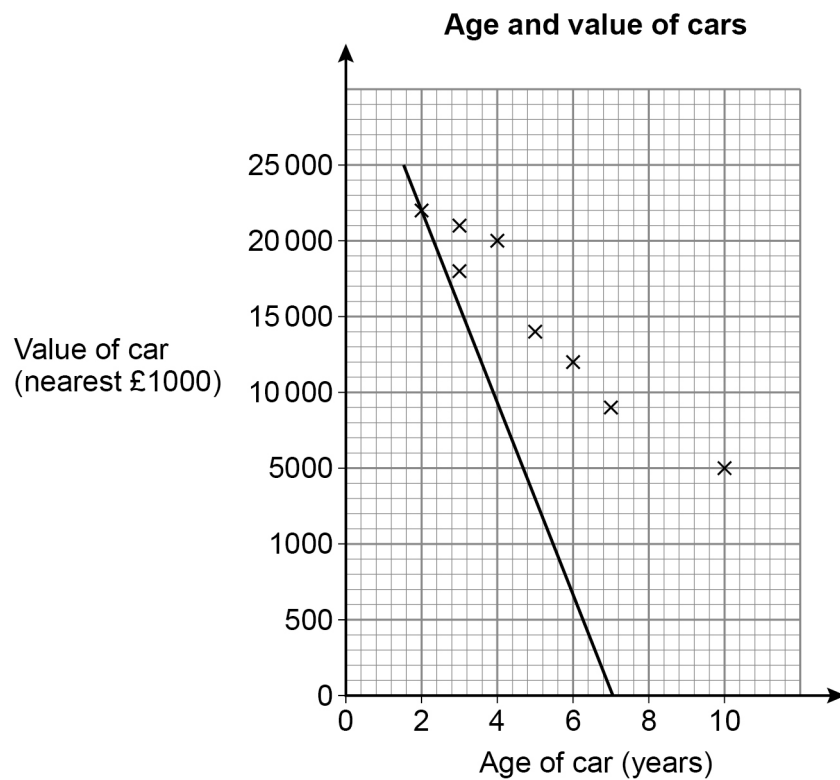
Answer \_\_\_\_\_



12 The table shows the age and value of some cars.

|                                 |        |        |        |        |        |        |       |       |
|---------------------------------|--------|--------|--------|--------|--------|--------|-------|-------|
| Age of car<br>(years)           | 2      | 3      | 3      | 4      | 5      | 6      | 7     | 10    |
| Value of car<br>(nearest £1000) | 22 000 | 21 000 | 18 000 | 19 000 | 14 000 | 12 000 | 9 000 | 5 000 |

Anil draws this scatter diagram and line of best fit for the data.



Write down **two** mistakes he has made.

[2 marks]

Mistake 1 \_\_\_\_\_

\_\_\_\_\_

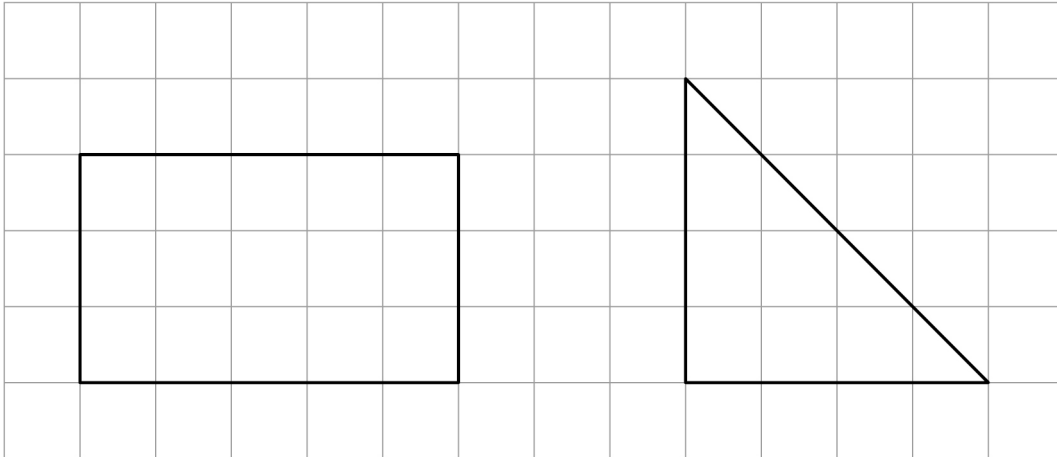
Mistake 2 \_\_\_\_\_

\_\_\_\_\_



**13**

A rectangle and a triangle are drawn on a square grid.



Work out the ratio    area of rectangle : area of triangle

**[3 marks]**


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Answer \_\_\_\_\_ : \_\_\_\_\_



- 14** A box contains cards that are either red, blue, green or yellow.

| Colour      | Red | Blue | Green | Yellow |
|-------------|-----|------|-------|--------|
| Probability | 0.1 | 0.24 |       |        |

- 14 (a)**  $P(\text{green}) = P(\text{yellow})$

Complete the table.

**[2 marks]**

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- 14 (b)** There are 600 cards in the box.  
How many cards are **not** blue?

**[3 marks]**

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Answer \_\_\_\_\_



**15**

A and B are triangles.

For each statement, tick the correct box to describe A and B.

**[3 marks]**

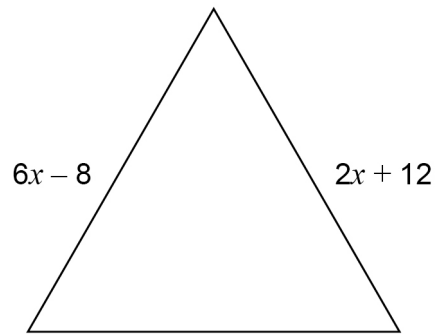
|                                              | <b>Always<br/>congruent</b> | <b>Sometimes<br/>congruent</b> | <b>Never<br/>congruent</b> |
|----------------------------------------------|-----------------------------|--------------------------------|----------------------------|
| A's sides are the same lengths as B's sides  | <input type="checkbox"/>    | <input type="checkbox"/>       | <input type="checkbox"/>   |
| A's angles are the same as B's angles        | <input type="checkbox"/>    | <input type="checkbox"/>       | <input type="checkbox"/>   |
| A is an enlargement of B with scale factor 2 | <input type="checkbox"/>    | <input type="checkbox"/>       | <input type="checkbox"/>   |



16

Here is an equilateral triangle.

All measurements are in centimetres.

Not drawn  
accurately

Work out the value of the perimeter of the triangle.

**[4 marks]**

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Answer \_\_\_\_\_ cm



- 17** Sid and Zak each throw the same biased coin.  
Here is some information about their throws.

|            |            |                                     |
|------------|------------|-------------------------------------|
| <b>Sid</b> | 80 throws  | Relative frequency of Heads is 0.75 |
| <b>Zak</b> | 120 throws | 72 are Heads                        |

- 17 (a)** Work out the relative frequency of Heads for the **200** throws.

**[2 marks]**

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Answer \_\_\_\_\_

- 17 (b)** Which results would give the **best** estimate of the probability of Heads?

Tick **one** box.

☐

Sid's 80  
throws

☐

Zak's 120  
throws

☐

All 200 throws

Give a reason for your answer.

**[1 mark]**

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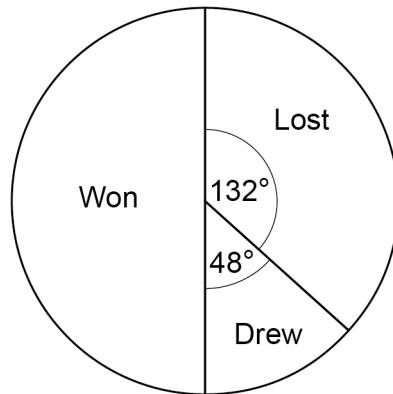


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18

The pie chart represents the results of matches played by a team.



30 matches were **won**.

How many matches were lost?

**[3 marks]**

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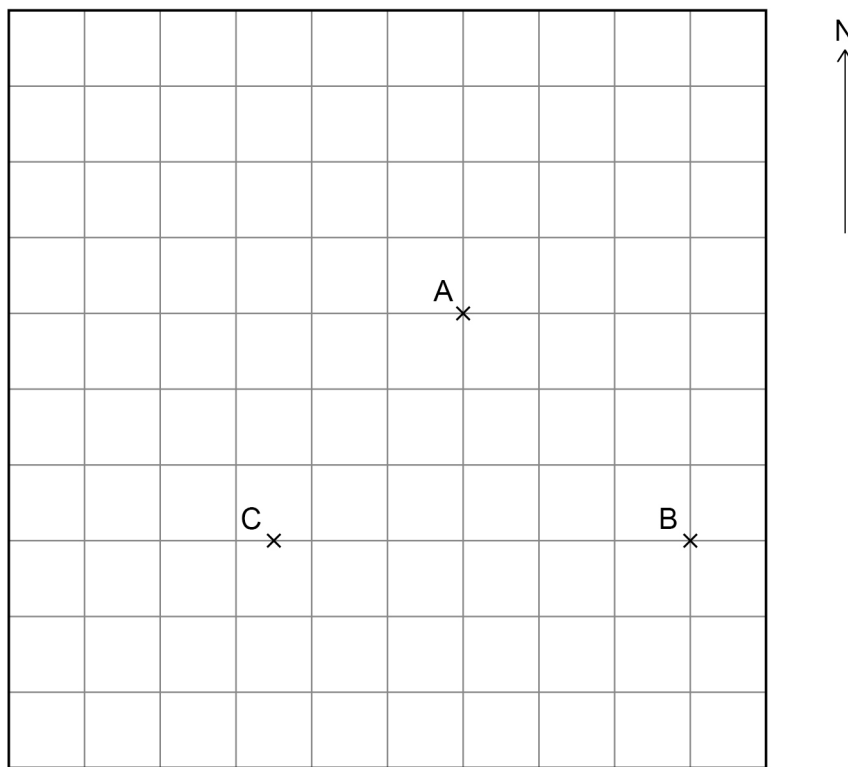
Answer \_\_\_\_\_

**Turn over for the next question**



- 19** Here is a scale diagram showing towns A, B and C on a centimetre grid.

**Scale** 1 : 200 000



- 19 (a)** Work out the **actual** distance from B to C.  
Give your answer in kilometres.

**[4 marks]**

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Answer \_\_\_\_\_ km



**19 (b)** B is South East of A.

Write down the bearing of B from A.

**[1 mark]**

Answer \_\_\_\_\_ °

**20** A linear sequence has

- 2nd term = 6
- 5th term = 18

Work out the  $n$ th term of the sequence.

**[3 marks]**

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Answer \_\_\_\_\_

**Turn over for the next question**



**21**

Ary, Bea and Cat each have an amount of money.

Cat has £280

- Cat's amount is  $\frac{2}{3}$  of Bea's amount.
- Ary's amount : Bea's amount = 5 : 12

Work out how much money Ary has.

**[3 marks]**

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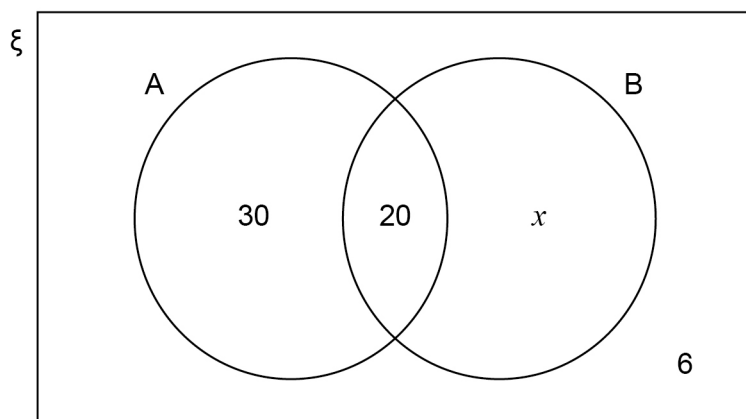
Answer £ \_\_\_\_\_



22

The Venn diagram shows some of the **numbers** of items in each set.

Do not write  
outside the  
box



$$P(A) = \frac{1}{2}$$

Work out the value of  $x$ .

[2 marks]

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

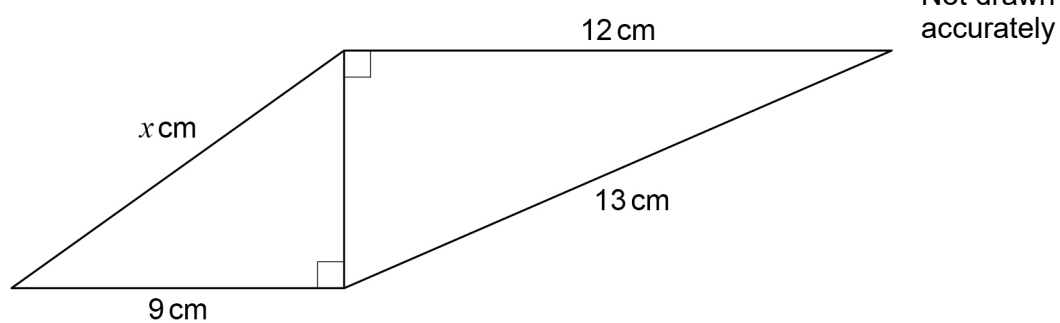
Turn over for the next question

Turn over ►



23

Do not write  
outside the  
box



Use Pythagoras' theorem to show that the value of  $x$  is between 10 and 11

[4 marks]

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**24 (a)** Write down the equation of a straight line parallel to  $y - 2x = 9$

**[1 mark]**

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Answer \_\_\_\_\_

**24 (b)** A straight line

- has gradient 5
- passes through the point (3, 7)

Circle the equation of the line.

**[1 mark]**

$$y = 3x - 2$$

$$y = 3x + 7$$

$$y = 5x$$

$$y = 5x - 8$$

**END OF QUESTIONS**

