



THIRD SPACE  
LEARNING

# Mathematics

## Paper 1

### (Calculator)

## Foundation Tier

OCR GCSE

SET 2

# Mathematics Paper 1 (Calculator) Foundation Tier OCR

## GCSE SET 2

Name

Total marks



Paper length: 1hr 30mins

## Instructions

- Use black ink or ball-point pen.
- Fill in the boxes at the top of this page with your name, centre number and candidate number.
- Answer all questions.
- Answer the questions in the spaces provided
  - there may be more space than you need.
- You must show all your working.
- Diagrams are NOT accurately drawn, unless otherwise indicated.
- Calculators may be used.

## Information

- The total mark for this paper is 100
- The marks for each question are shown in brackets
  - use this as a guide as to how much time to spend on each question.

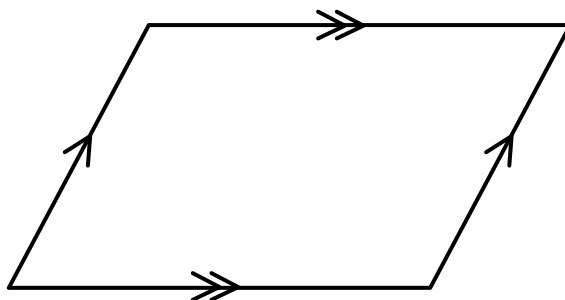
## Advice

- Read each question carefully before you start to answer it.
- Keep an eye on the time.
- Try to answer every question.
- Check your answers if you have time at the end.

**You must have:** Ruler graduated in centimetres and millimetres, protractor, pair of compasses, pen, HB pencil, eraser. Tracing paper may be used.

*Please note, this practice paper is an example to help revision, these topics can be tested in other ways and other topics may be included in the actual papers*

- 1 (a)** Write down the mathematical name of this quadrilateral.



**(a)** ..... **[1]**

- (b)** Write down the order of rotational symmetry of the quadrilateral.

**(b)** ..... **[1]**

- 2** Write down each of the following.

- (a)** An even number.

**(a)** ..... **[1]**

- (b)** A factor of 21.

**(b)** ..... **[1]**

- (c)** A prime number between 10 and 20.

**(c)** ..... **[1]**

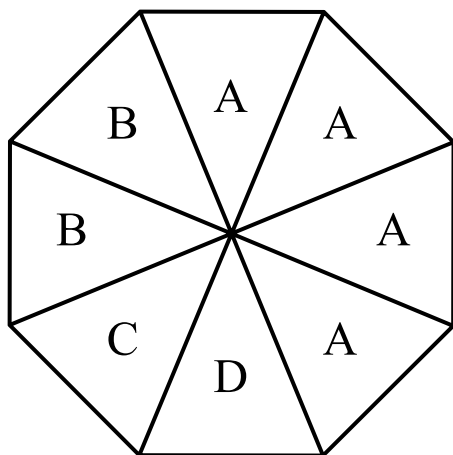
**3** (a) Write 0.75 as a fraction.

(a) ..... [1]

(b) Write  $\frac{3}{25}$  as a decimal.

(b) ..... [1]

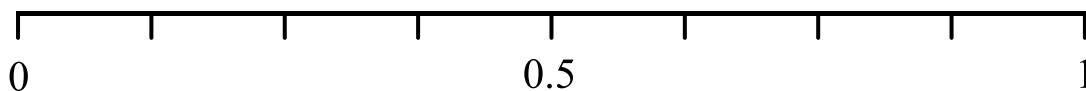
**4** Here is a spinner.



Mark with an arrow (↓) the probability the spinner will land on

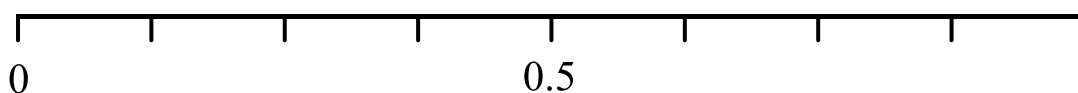
(a) A

[1]



(b) B

[1]



**Turn over**

**5** Use one of the symbols  $<$ ,  $=$  or  $>$  to make each statement true given that  $x = 10$ .

**(a)**  $x + 5$  .....  $2x$

**[1]**

**(b)**  $2x - 1$  .....  $x + 11$

**[1]**

**(c)**  $\frac{x}{2}$  .....  $x - 5$

**[1]**

**6** Nia is  $n$  years old. Nia is twice as old as Ifan.

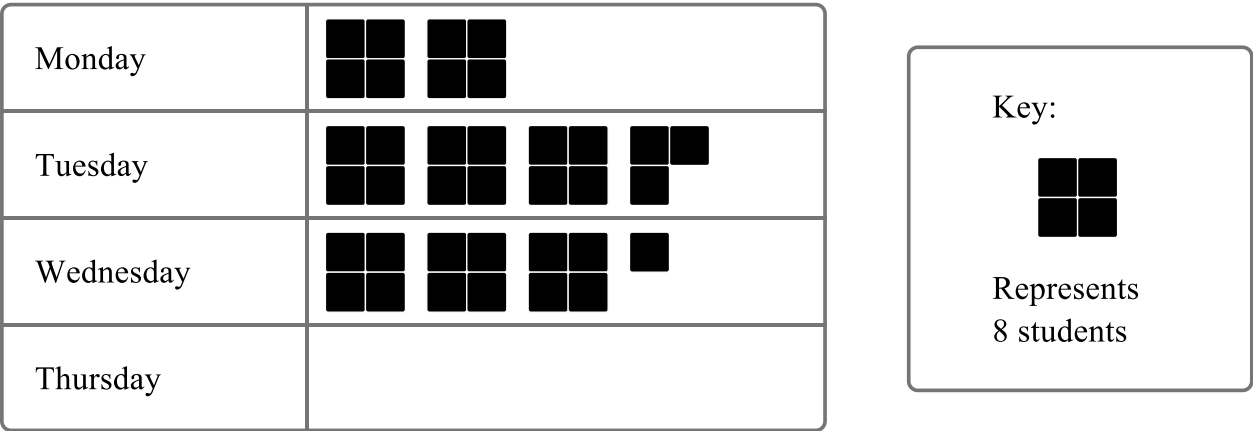
**(a)** Write an expression, in terms of  $n$ , for Ifan's age.

**(a)** ..... **[1]**

**(b)** The ratio of Nia's age : Catrin's age is 5:3.  
The sum of their ages is 32.  
Work out Nia's age.

**(b)** ..... **[2]**

7 The pictogram shows information about the number of year 7 students who had school dinners on Monday, Tuesday and Wednesday.



On Thursday, 20 students had school dinners.

(a) Use this information to complete the pictogram.

[1]

There are 56 students in year 7.

(b) Lily says that on Tuesday more than half of the students in year 7 had school dinners.

Is Lily correct?

Explain how you know.

-----

-----

[2]

**Turn over**

- 8 Ben and Maizy go to the cinema. Here is the price list.

Ticket	£4.99
Popcorn	£2.50
Sweets	£1.95
Crisps	£1.70
Drinks	£2.10

Ben and Maizy buy a ticket each.

Ben has popcorn and a drink.

Maizy has sweets and a drink.

They pay together with a £20 note.

How much change do they get?

£ ..... [3]

- 9 Miss Jones needs to buy enough pencils for every student in her school.

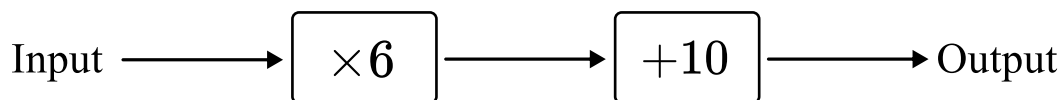
There are 250 students in the school.

Pencils come in packs 12.

What is the smallest number of packs of pencils Miss Jones could buy?

..... [2]

**10** Here is a number machine.



**(a)** Work out the output when the input is 5.

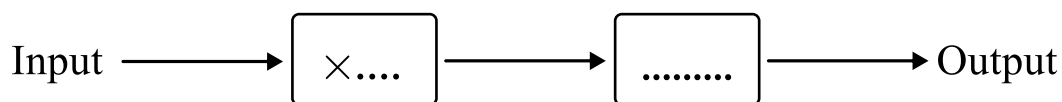
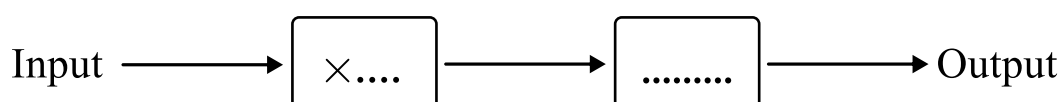
**(a)** ..... **[1]**

Willow is going to create a different number machine.

She wants the output to be 16 when the input is 3.

**(b)** Complete the number machines below to show two different combinations of functions she could use.

**[2]**



**Turn over**

**11** Here is a list of numbers.

4      11      7      9      4      1      2      6

**(a)** Work out the mean.

**(a)** ..... [2]

**(b)** Work out the median.

**(b)** ..... [2]

**(c)** Another number is added to the list. The mean of the numbers is now 6.  
Work out the number that is added.

**(c)** ..... [2]

---

**12 (a)** Solve  $x + 11 = 20$

**(a)** ..... [1]

**(b)** Solve  $\frac{x}{3} - 5 = 6$

**(b)** ..... [2]

---

- 13** Harry gets paid £11.20 per hour.  
On Monday he starts work at 09 15 and finishes at 16 45.

- (a)** How much does Harry get paid on Monday?

£ ..... **[2]**

It takes Harry 12 minutes to walk to the bus station. He gets off the bus at Kingfisher Close and it then takes him 4 minutes to walk home.

Here is a section of the bus timetable.

Bus station	Kingfisher Close
16 48	17 02
17 03	17 17
17 18	17 32

- (b)** What is the earliest Harry could arrive home on Monday?

..... **[3]**

**Turn over**

- 14 Here are the test results of three students.

Jack	$\frac{10}{12}$
Yasmin	$\frac{15}{20}$
Sam	$\frac{11}{15}$

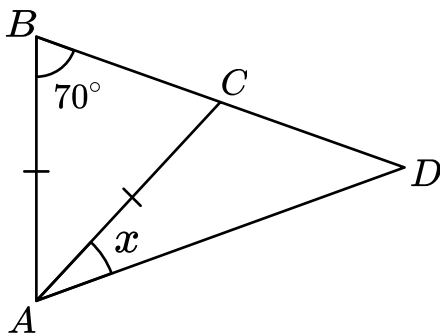
Yasmin says ‘I have done the best as I got the highest mark’.

By comparing the fractions, decide whether Yasmin is correct.

You must show all of your working.

[3]

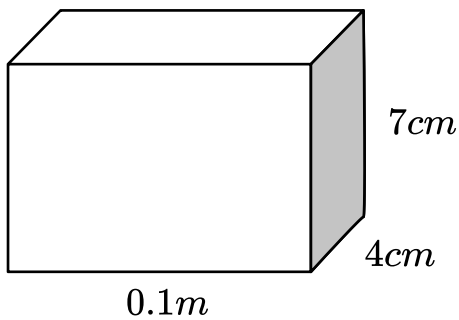
- 15 Triangles ABC and ABD are both isosceles triangles, where  $AB = AC$  and  $AD = BD$   
Angle  $ABD = 70^\circ$ .



Work out the size of angle  $x$ .

.....° [3]

**16** Here is a cuboid.



Lianne says the volume of the cuboid is  $0.1 \times 4 \times 7 = 2.8\text{cm}^2$ .

Write down two mistakes Lily has made.

1. ....

.....

2. ....

.....

[2]

---

**17** Make  $p$  the subject of the formula  $h = 6p - 7$ .

..... [2]

**Turn over**

18 The diagram shows a solid prism.

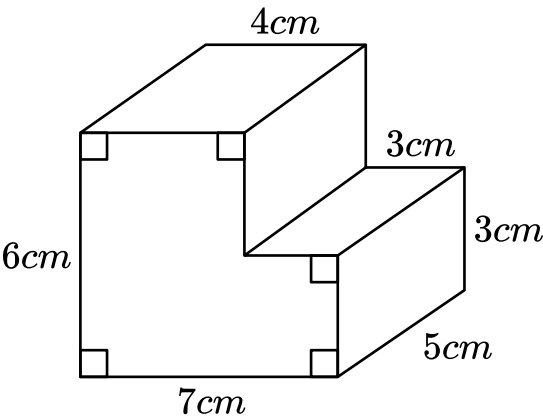
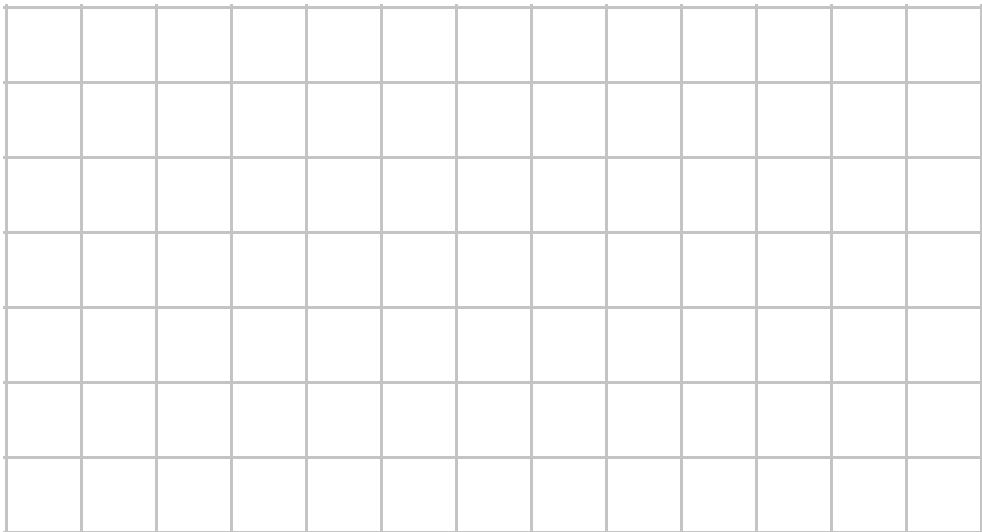


Diagram NOT  
accurately drawn

(a) On the centimetre square grid, draw the plan of the solid prism.

[2]



(b) Write down the number of vertices that this prism has.

(b) ..... [1]

- 19 There are red, white, blue and green counters in a bag. The table shows the probability that a red or white counter is taken from the bag.

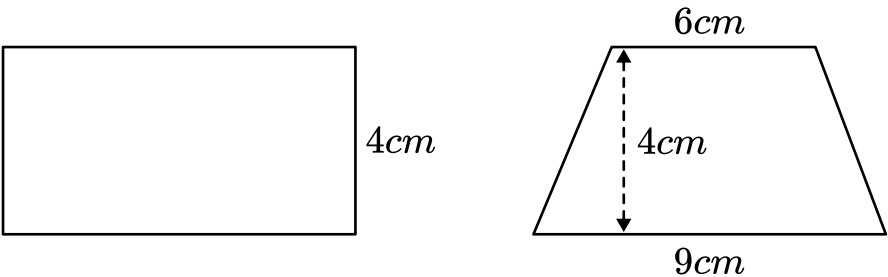
Colour	Red	White	Blue	Green
Probability	0.1	0.5		

There are the same number of blue counters and green counters in the bag.

Complete the table to show the probability of taking a blue or a green counter from the bag.

[2]

- 20 Here is a rectangle and a trapezium.



The area of the rectangle is 40% greater than the area of the trapezium.

Work out the length of the rectangle.

..... cm [4]

**Turn over**

**21** 120 people go to the zoo.

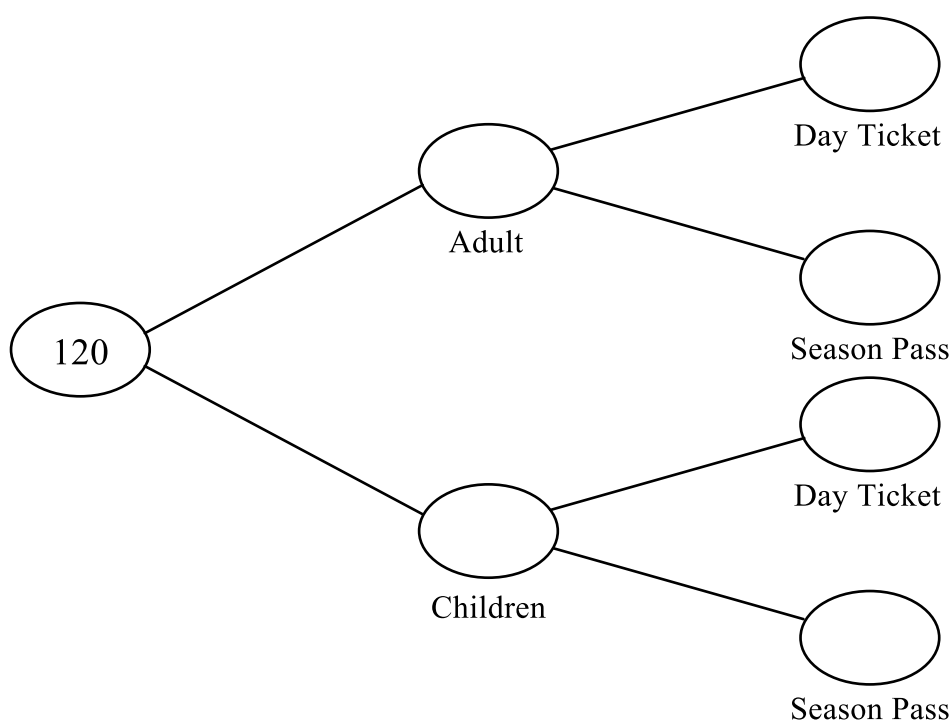
64 of the people are children.

15 of the adults have season passes.

$\frac{3}{4}$  of the people bought day tickets.

**(a)** Complete the frequency tree for this information.

[4]



**(b)** One of the children is picked at random. What is the probability that the child has a season pass?

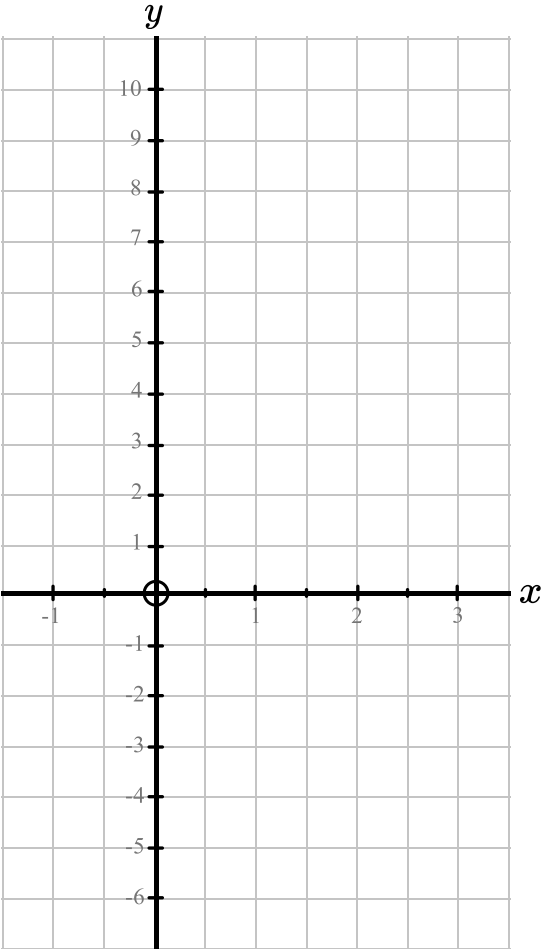
**(b)** ..... [2]

22 (a) Complete this table for  $y = 3x - 1$ .

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

[1]

(b) On the grid below, draw the graph of  $y = 3x - 1$  for values of  $x$  from -1 to 3



[2]

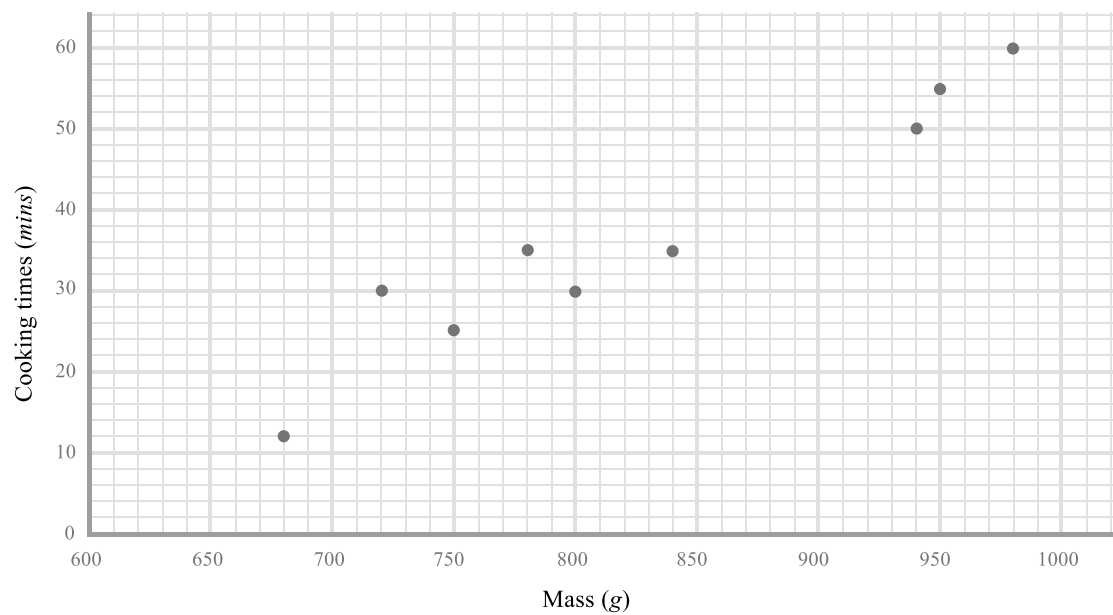
(c) The line is continued up to the right. Will the line pass through the point (50, 151)?  
Show how you decide.

because  
-----  
-----

[2]

Turn over

23 This scatter diagram shows information about the cooking times of a variety of cakes.



Here is some information about another three cakes.

Mass (g)	750	850	700
Cooking time (mins)	35	50	20

(a) Plot this information on the scatter diagram. [2]

(b) What type of correlation does this scatter diagram show?

(b) ..... [1]

(c)(i) Draw a line of best fit on the diagram. [1]

(ii) Use your line of best fit to estimate the cooking time of a cake which weighs 900g.

(c) (ii) ..... mins [1]

(d) Work out the fraction of cakes that take longer than 30 minutes to cook.

(d) ..... [2]

**24** A box holds 12 doughnuts.

It takes 500g of flour to make 20 doughnuts.

Linda needs to make 4 boxes of doughnuts and she has 1.5kg of flour.

Does Linda have enough flour to make 4 boxes of doughnuts?

You must show how you decide.

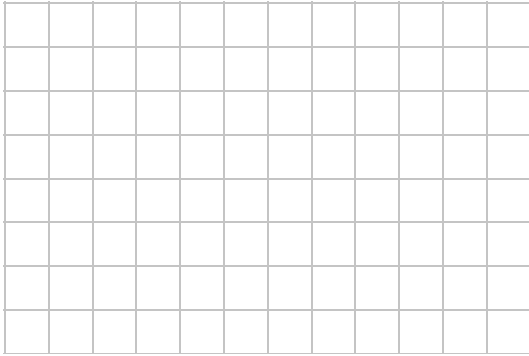
----- [4]

**Turn over**

- 25 Here are two column vectors.

$$\mathbf{a} = \begin{pmatrix} 3 \\ 1 \end{pmatrix} \quad \mathbf{b} = \begin{pmatrix} -1 \\ 2 \end{pmatrix}$$

On the grid below, draw and label the vector  $2\mathbf{a} + \mathbf{b}$



[3]

- 26 Hollie buys 2 adult tickets and 3 child tickets for a show. She pays £35.  
Betsy buys 3 adult tickets and 4 child tickets for the same show. She pays £49.50.

Calculate the cost of one adult ticket and the cost of one child ticket.

You must show your working.

Adult £ .....

Child £ .....

[5]

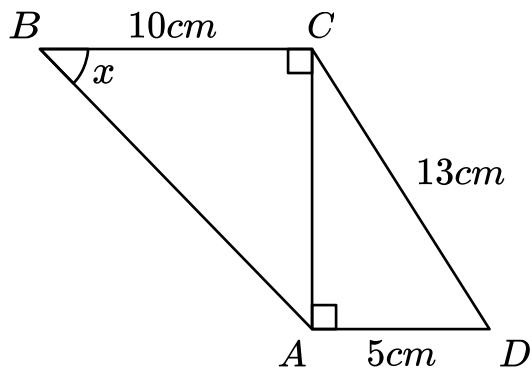
- 27 Gary invests £6000 at a rate of 4% per year compound interest.  
Calculate the total amount of interest Gary will have earned after 5 years.  
Give your answer to the nearest penny.

----- [4]

- 28 ABCD is a quadrilateral made from two right angled triangles.

Work out the size of angle  $x$ .

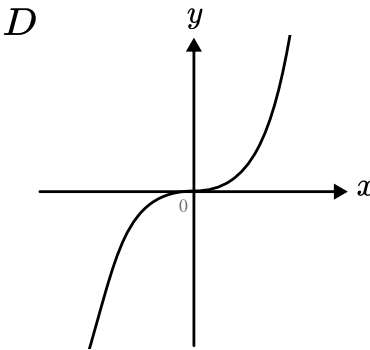
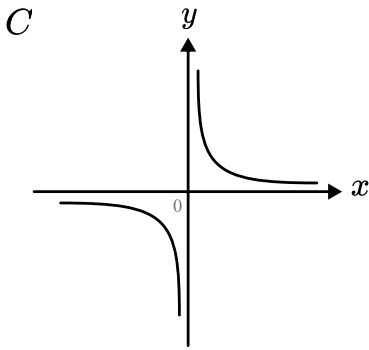
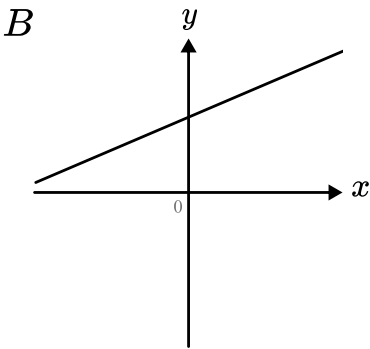
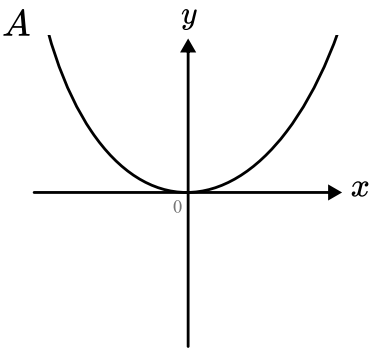
Give your answer to 1 decimal place.



----- [4]

**Turn over**

29 Here are four graphs.



Write down the letter of the graph that could have equation:

$y = \frac{1}{2}x + 3$	
$y = x^3$	
$y = \frac{1}{x}$	

[3]

END OF QUESTION PAPER

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