TGMT

PRACTICE PAPER FOR GCSE MATHS

A PRACTICE PAPER TO HELP YOU PASS YOUR GCSE MATHS EXAM

FOUNDATION TIER

GCSE Mathematics

Practice Paper 2023

Paper 3 (Calculator)

Foundation Tier

GCSE Maths Tutor

How it all Works!

Work through the practice booklet, scan the code, watch the live tutorial and check your answers!

Try it out!

Answer ALL questions.
Write your answers in the spaces provided.
You must write down all the stages of your working.

1. Write the following numbers in order of size.
Start with the smallest number.

$1.02 \quad 0.12 \quad 1.20 \quad 0.21$

.....

(1 mark)

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2. Simplify $e + e + e + e$

.....

(1 mark)

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3. Write 0.19 as a fraction.

.....

(1 mark)

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4. Change 53 centimetres into millimetres.

.....

(1 mark)

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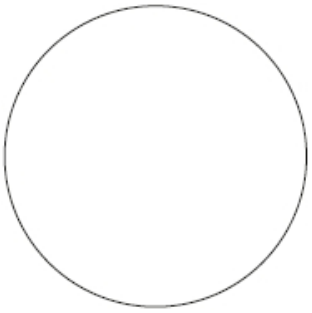
5. Find the number that is exactly halfway between 12 and 26

.....

(1 mark)

6. On the diagram below, draw a segment of the circle.

Shade the segment.



(1 marks)

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7. There are 100 beads in a bag.

50 of the beads are red
25 of the beads are blue
15 of the beads are green
The rest of the beads are yellow.

Hafsah takes at random a bead from the bag.

a) How many yellow beads are in the bag?

.....

(2 marks)

Hafsah takes at random a bead from the bag.

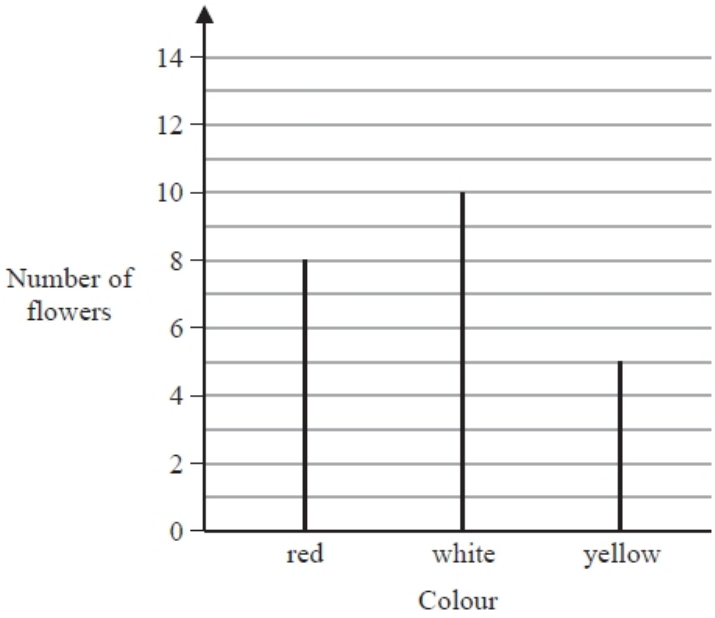
b) Write down the probability that the bead is green.

.....

(1 mark)

8. In Josiah's garden, the flowers are only red, white, yellow or blue.

The chart shows the number of red, white and yellow flowers.



The total number of flowers is 30.

a) Work out the number of blue flowers.

.....

(2 marks)

b) Write down the mode.

.....

(1 mark)

9. There are 80 men, women and children at an event.

50% of the people at the event are women.

30% of the people at the event are men.

Work out the total number of children at the event.

.....

(3 marks)

10. $T = 3x + 4y$

a) Work out the value of T when $x = 5$ and $y = -7$

.....

(2 marks)

b) Work out the value of y when $T = 38$ and $x = 6$

.....

(2 marks)

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11. Logan buys 13 bicycle lights for £7.50 each.
He pays with five £20 notes.

a) How much change should Logan get?

.....

(2 marks)

The normal price of a bicycle is £193.95

In a sale there is $\frac{1}{3}$ off the normal price of the bicycle.

b) Work out the price of the bicycle in the sale.

.....

(2 marks)

12. Write 323 560 correct to 3 significant figures.

.....

(1 mark)

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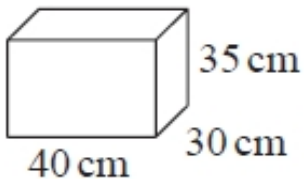
13. Tiana has a van.

She is going to use the van to deliver boxes.
Each box is a cuboid, 40cm by 30cm by 35cm



The space for boxes in the van has

Maximum length 2.4m
Maximum width 1.5m
Maximum height 1.4m

The space for boxes is empty.

Tiana wants to put as many boxes as possible into the van.

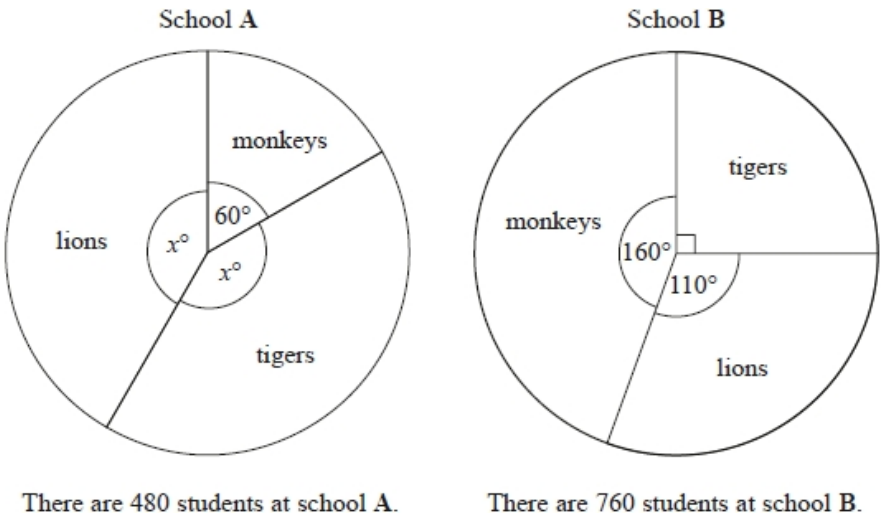
a) Work out the maximum amount of boxes Tiana can fit in the van.

You must show how you get your answer.

.....

(3 mark)

14. The pie charts show information about the favourite animal of each student at school A and each student at school B.



There are 480 students at school A.

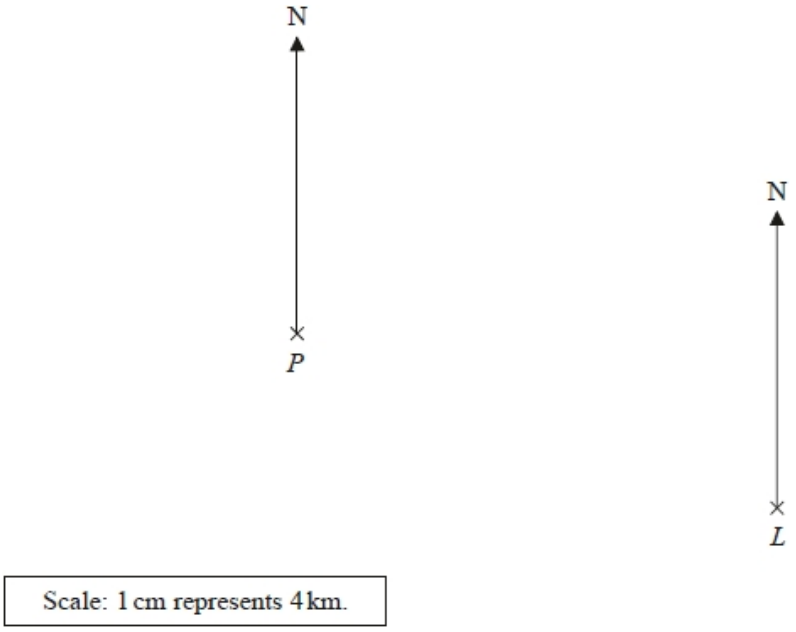
There are 760 students at school B.

Alfie says, “the same number of students at each school have tigers as their favourite animal”

Is Alfie correct?
You must show how you get your answer.

(4 marks)

15. The accurate scale drawing shows the positions of port P and lighthouse L.



Scale: 1 cm represents 4 km.

Dan sails his boat from port P on a bearing of 070^o

He sails for $1\frac{1}{2}$ hours at an average speed of $12km/h$ to port Q.

Find

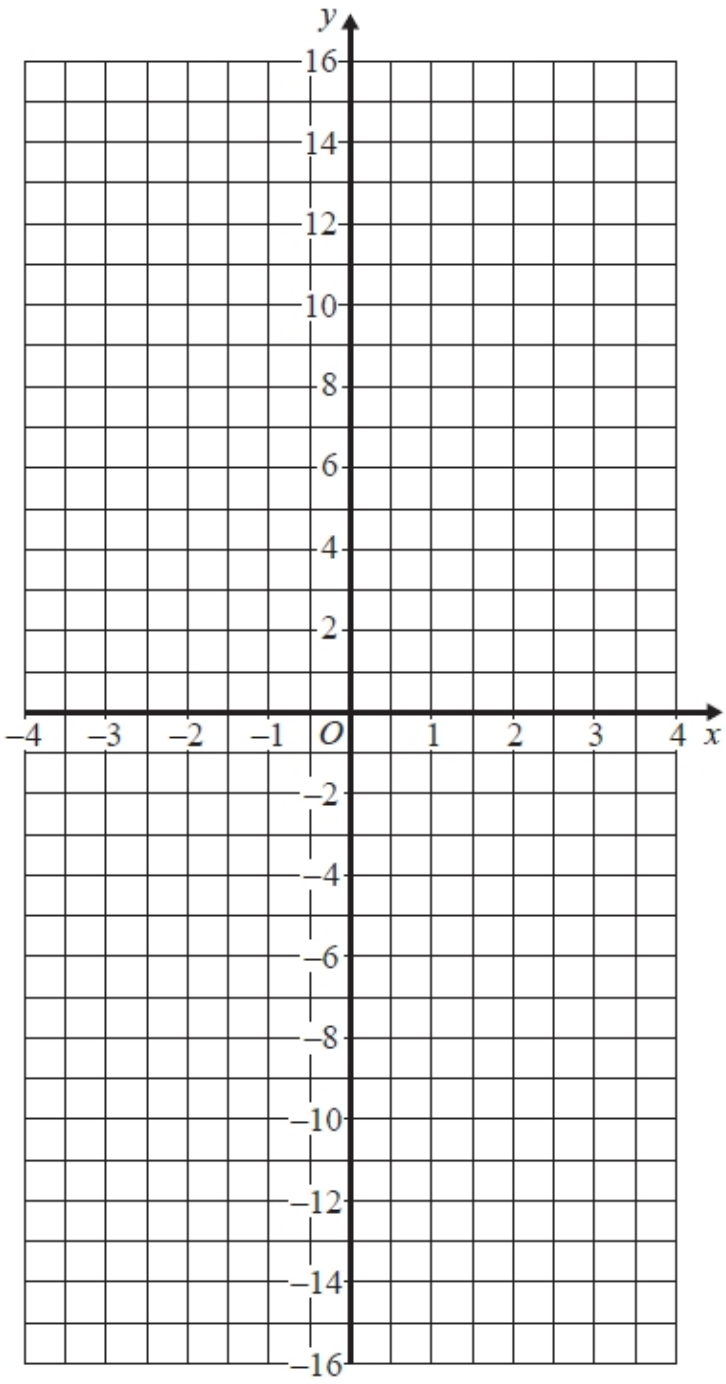
i) the distance, in km, of port Q from lighthouse L.
ii) the bearing of port Q from lighthouse L.

Distance QL = ... km

Bearing of Q from L = ... °

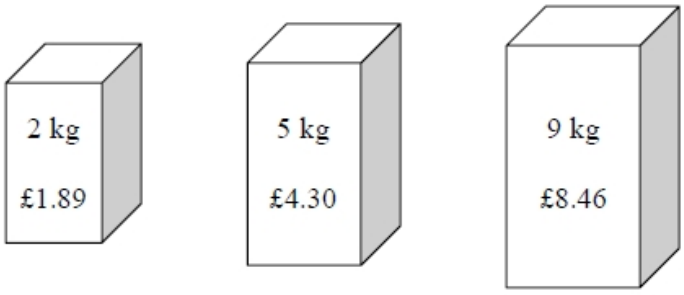
(5 marks)

16. On the grid below, draw the graph of $y = 1 - 4x$ for values of x from -3 to 3



(3 marks)

17. Soap powder is sold in three sizes of box.



A 2kg box of soap powder costs £1.89
A 5kg box of soap powder costs £4.30
A 9kg box of soap powder costs £8.46

Which size of box of soap powder is the best value for money?
You must show how you get your answer.

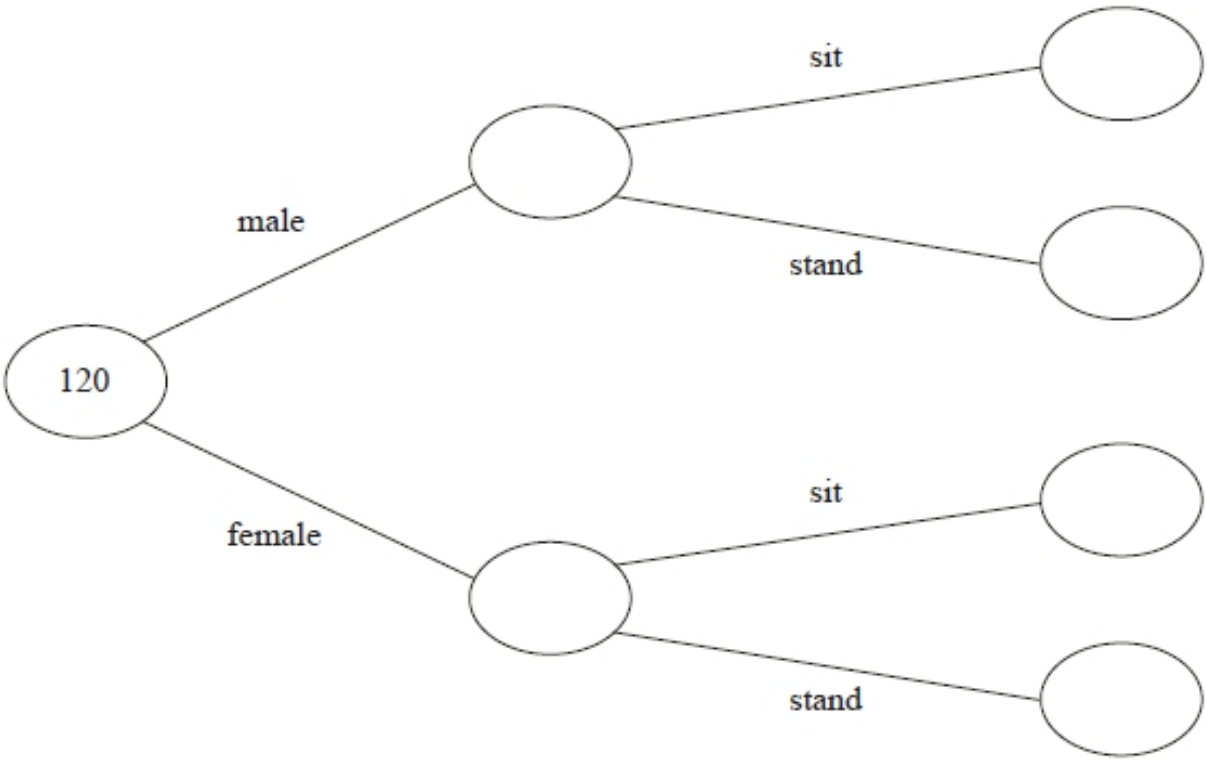
(3 marks)

18. 120 people were at a football match.

Each person was asked if they wanted to stand or sit to watch the match.

75 of the people were female.
29 of the males wanted to stand.
25% of the people wanted to sit.

Use this information to complete the frequency tree.



(4 marks)

19. On a farm

The number of cows and the number of sheep are in the ratio $6:5$
The number of sheep and the number of pigs are in the ratio $2:1$

The total number of cows, sheep and pigs on the farm is 189

How many sheep are there on the farm.

(3 marks)

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20. a) Express 56 as the product of its prime factors.

.....

(2 marks)

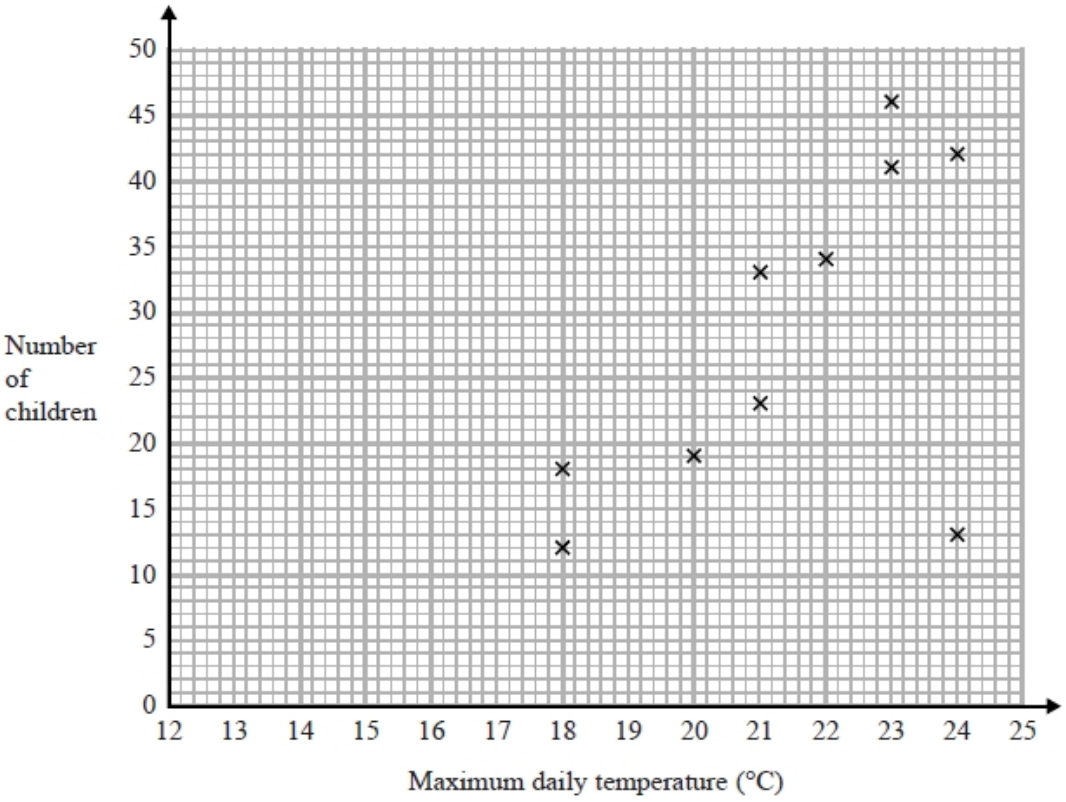
b) Find the Highest Common Factor (HCF) of 24 and 60

.....

(2 marks)

21. Caitlyn records the maximum daily temperature each day for 10 days.
She records the number of children going to a paddling pool for each of these days.

She draws this scatter graph for her information.



Caitlyn's information for one of these days is an outlier on the scatter graph.

a) Give one possible reason for this.

……

……

(1 mark)

b) What type of correlation does the scatter graph show?

……

(1 mark)

On the 11th day, the maximum daily temperature was 19^oC

c) Write down an estimate for the number of children going to the paddling pool on the 11th day.

……

(1 mark)

It would not be sensible to use the scatter graph to predict the number of children going to the paddling pool on a day when the maximum daily temperature was 13^oC.

d) Give a reason why.

……

……

(1 mark)

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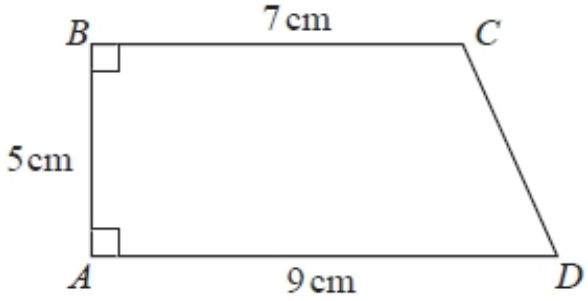
22. ABCD is a trapezium.



Work out the length CD.

Give your answer correct to 1 decimal place.

…… cm

(3 marks)

23. Make g the subject of the formula $T = \sqrt{\frac{g+6}{2}}$

.....

(3 marks)

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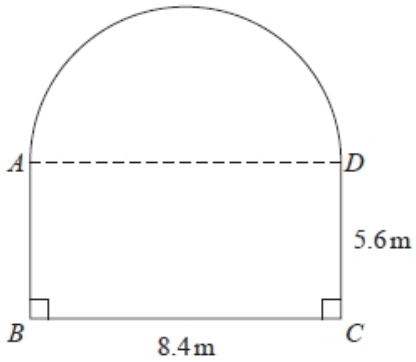
24. A garden is the shape of a rectangle, ABCD, and a semi-circle.

AD is the diameter of the semicircle.



Lexi is going to cover the garden with fertiliser. A box of fertiliser costs £4.99.

Lexi has been told that one box of fertiliser will cover $12m^2$ of garden.

a) Work out the cost of buying enough fertiliser to cover the garden completely.

£ .....

(5 marks)

Lexi finds out that one box of fertiliser will cover more than $12m^2$ of garden.

b) Explain how this might affect the number of boxes she needs to buy.

.....

.....

(1 mark)

25. Solve $x^2 - 7x - 18 = 0$

.....

(3 marks)

26.

$$a = \begin{pmatrix} 3 \\ -7 \end{pmatrix} \qquad b = \begin{pmatrix} 4 \\ 2 \end{pmatrix}$$

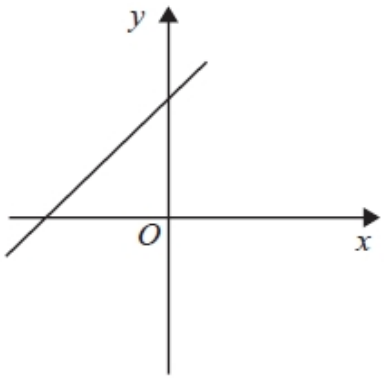
Work out $b - 2a$ as a column vector

.....

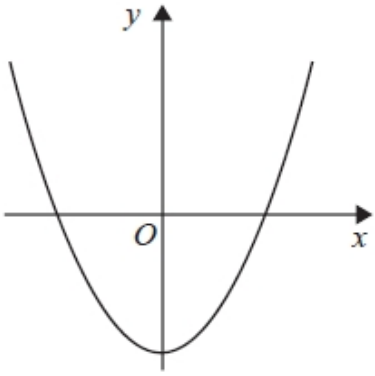
(2 marks)

27. Here are four graphs.

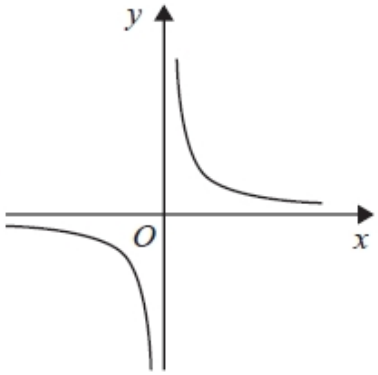
Graph A



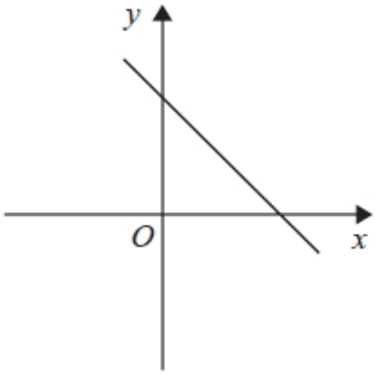
Graph B



Graph C



Graph D



Each of the equations in the table is the equation of one of the graphs.

Complete the table.

Equation	Letter of graph
$y = x^2 - 7$	
$y = 3 - 2x$	
$y = 2x + 3$	
$y = \frac{1}{x}$	

(2 marks)

28. Kamilla invests £200 000 in a savings account for 4 years.

The account pays compound interest at a rate of 1.5% per annum.

Calculate the total amount of interest Kamilla will get at the end of 4 years.

£ ……

(3 marks)

End of Paper