



GCSE BITESIZE examinations

General Certificate of Secondary Education

Specimen paper

MATHEMATICS
FOUNDATION TIER

Paper 1 Non-calculator

Time allowed: 1 hour 30 minutes.

You must not use a calculator.

The maximum mark for this paper is 100.

Mark allocations are shown in brackets.

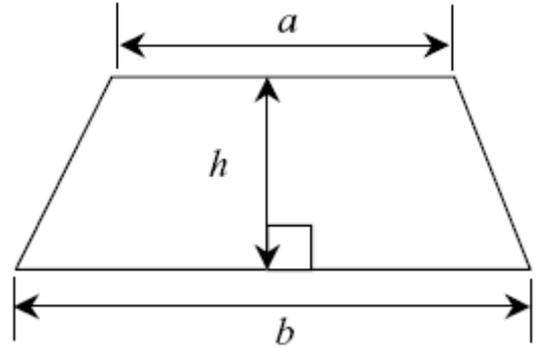
Show clearly how you work out your answer.

In addition to this paper, you will require:

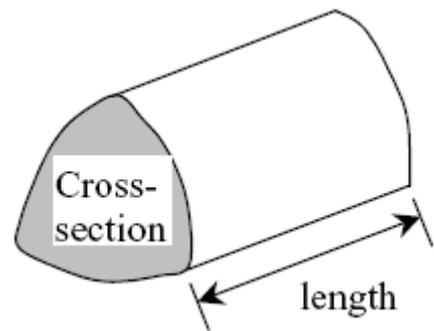
- a ruler graduated in centimetres and millimetres
- protractor
- compasses
- pen
- HB pencil
- eraser
- tracing paper (optional)

Formulas sheet: Foundation Tier
You may use the following formulas:

Area of a trapezium = $\frac{1}{2} (a+b)h$



Volume of prism = area of cross-section \times length



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

1. (a) Work out $1,436 + 217$

Answer: (1 mark)

- (b) Calculate 26×19

Answer: (1 mark)

- (c) Work out $110 \div 4$ exactly

Answer: (1 mark)

2. (a) Write $\frac{2}{5}$ as a decimal.

Answer: (1 mark)

- (b) Write 0.38 as a percentage.

Answer: (1 mark)

- (c) Write 36% as a fraction in its simplest terms.

Answer: (2 marks)

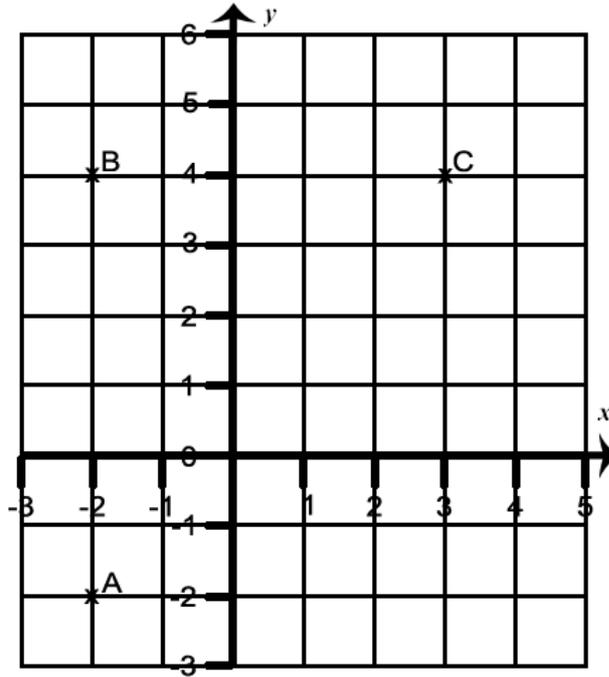
- (d) Write three hundred thousand in figures.

Answer: (1 mark)

- (e) $\frac{7}{8}$ of the children in a school are right-handed. What fraction of the children in the school are left-handed?

Answer: (1 mark)

3.



(a) Write down the coordinates of the points A, B and C.

A (.....,) B (.....,) C (.....,)
(3 marks)

(b) Write down the coordinates of the point D, which makes a rectangle with A, B and C.

D (.....,) **(2 marks)**

4. (a) Circle the fractions in the list which are equivalent to $\frac{3}{4}$

$\frac{33}{44}$ $\frac{4}{7}$ $\frac{9}{12}$ $\frac{13}{14}$ $\frac{30}{40}$ $\frac{4}{5}$ $\frac{21}{28}$

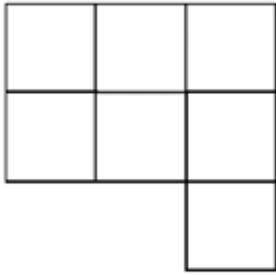
(2 marks)

(b) Circle the numbers in the list that are equal to $\frac{1}{4}$

2.5% 14% 0.25 $\frac{3}{12}$ 0.14 25% $\frac{1}{14}$

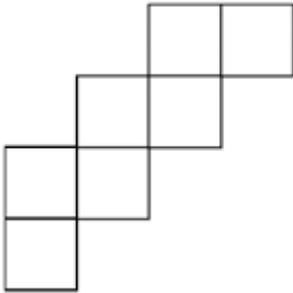
(2 marks)

5. (a) Add one square to this pattern to give it one line of symmetry.



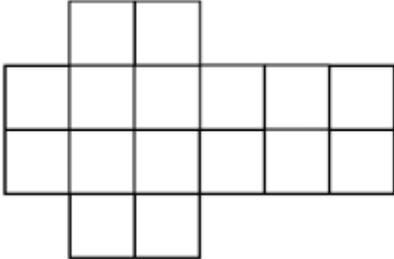
(1 mark)

- (b) Draw one line of symmetry onto this pattern.



(1 mark)

- (c) Name the shape that this pattern is a net of:



Answer:

(1 mark)

6. (a) What is a six-sided polygon called?

Answer: (1 mark)

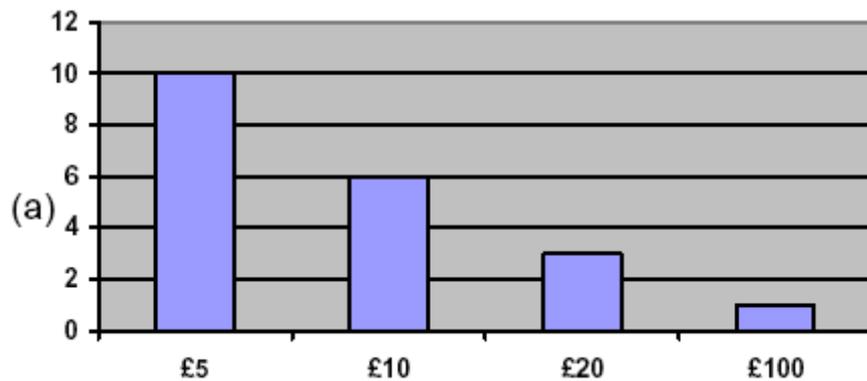
(b) What is the total of its interior angles?

Answer: ° (2 marks)

(c) If the polygon is regular, what is the size of each interior angle?

Answer: ° (1 mark)

7. The chart shows the number of winners of each prize in a local lottery.



(a) How many people won a £20 prize?

Answer: (1 mark)

(b) What is the mode prize?

Answer: £..... (1 mark)

(c) What is the median prize?

Answer: £..... (2 marks)

8. (a) Find the value of $3a + 2b$ when $a = 6$ and $b = 5$.

Answer: (2 marks)

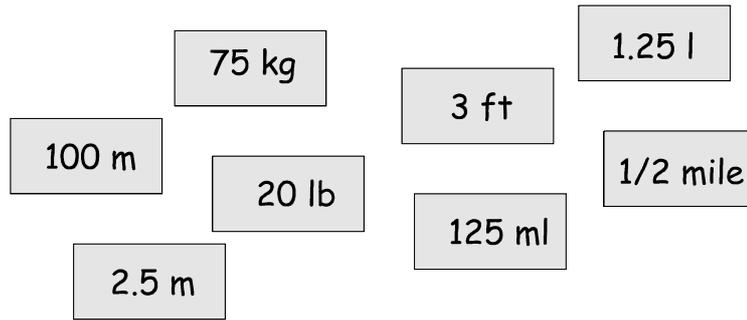
- (b) Find the value of $2x^2$ when $x = 3$

Answer: (1 mark)

- (c) Find the value of $5x - 3y$ when $x = -2$ and $y = -4$

Answer: (2 marks)

9.



Choose the most appropriate answer from the list above:

(a) Weight of a man

Answer: (1 mark)

(b) Length of a football pitch

Answer: (1 mark)

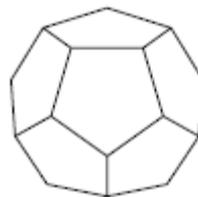
(b) Height of a room

Answer: (1 mark)

(c) Capacity of a glass

Answer: (1 mark)

10. A ten-sided die with sides numbered 1-10 is thrown.



(a) What is the probability of throwing a 1?

Answer: (1 mark)

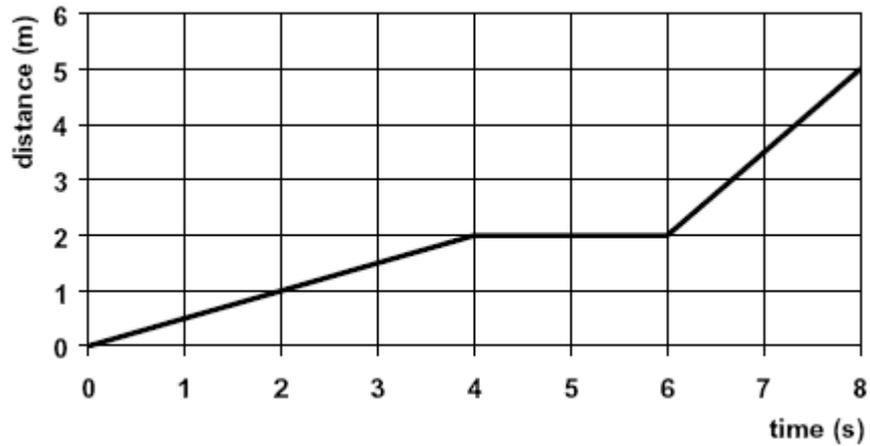
(b) What is the probability of throwing a number less than 4?

Answer: (1 mark)

(c) What is the probability of throwing a prime number?

Answer: (2 marks)

11. The graph shows the motion of a high-speed model car.



(a) How far away from its starting point was the car after 7 seconds?

Answer:.....m (1 mark)

(b) How far did the car travel in the first 4 seconds?

Answer:.....m (1 mark)

(c) How fast did the car go in the first 4 seconds?

Answer:m/s (2 marks)

(d) Between what times was the car travelling fastest?

Answer:..... (1 mark)

(e) Describe what is happening between 4 and 6 seconds.

Answer:..... (1 mark)

12. (a) Simplify $4a + 7b + 6a - 3b - 2a$

Answer: (2 marks)

(b) Simplify $3(x + 2) + 5x$

Answer: (2 marks)

(c) Solve $x + 5 = 12$

Answer: (1 mark)

(d) Solve $5x - 2 = 13$

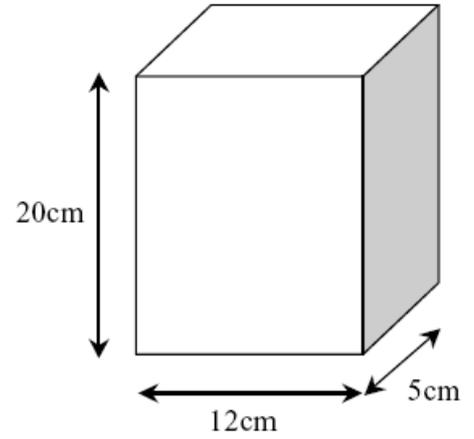
Answer: (1 mark)

(e) Solve $7x - 14 = 4x + 7$

Answer: (2 marks)

13. (a) A new breakfast cereal is sold in boxes, as shown. What is the volume of the box?

Answer: cm^3 (2 marks)



- (b) In a promotion, the company is offering “20% extra free”. What is the new volume?

..... cm^3 (2 marks)

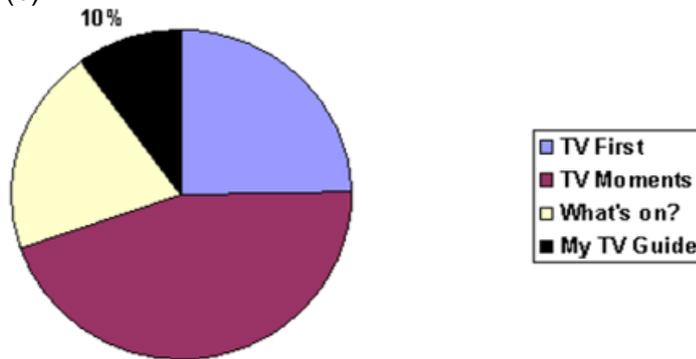
14. A survey looked at 90 people's favourite TV magazine. The results are shown in the table.

Magazine	People
TV First	22
TV Moments	40
What's On?	
My TV Guide	

(a) A pie chart is drawn to show the data. What size angle should be used for the slice representing *TV First*?

Answer:^o (2 marks)

(b)



How many people chose *My TV Guide*?

Answer:people (2 marks)

15. Rakesh and Tina share out £40 in the ratio 5:3, in that order. How much do they each get?

Answer: Rakesh £..... Tina £..... (3 marks)

16. A furniture company makes tables and chairs. Tables are sold for £120, and chairs for £40.

(a) An order comes in for 9 tables and 17 chairs. What is the total bill?

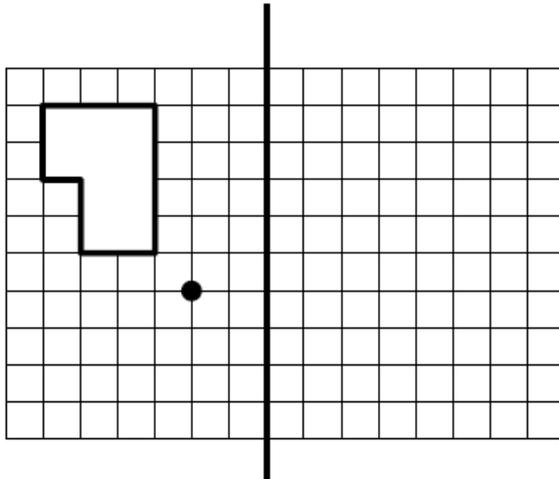
Answer: £..... **(2 marks)**

(b) Write down an expression for the cost of an order (the retail cost, not the cost of manufacture) for t tables and c chairs.

Answer: £ **(2 marks)**

17. (a) Draw the reflection of the shape in the line shown.

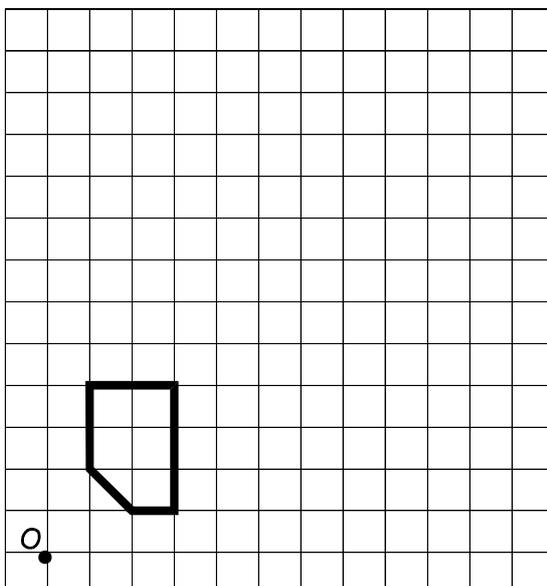
(2 marks)



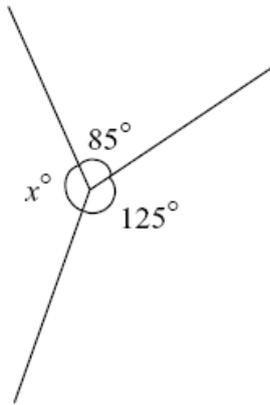
(b) Draw a 90° clockwise rotation of the shape using the black circle as the centre.
(2 marks)

(c) Enlarge this shape with a scale factor of 3, centre O.

(3 marks)



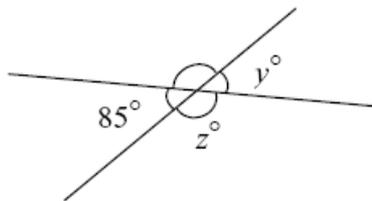
18. (a) Find the size of the angle marked x .



Answer $x = \dots\dots\dots^\circ$

(1 mark)

- (b) Find the size of the angles marked y and z .



Answers $y = \dots\dots\dots z = \dots\dots\dots^\circ$

(2 marks)

- (c) Fill in the table from this list of angles:

156°, 90°, 310°, 21°, 175°, 89°

Acute angle	
Obtuse angle	
Reflex angle	
Right angle	

(2 marks)

19. The recommended price of a Portable DVD player is £90.

TVs Direct is selling the player with 20% off the recommended price.

Hi-Fi Gear is selling the player with a discount of $\frac{2}{9}$ off the recommended price.

(a) What is the price in TVs Direct?

Answer: £..... **(2 marks)**

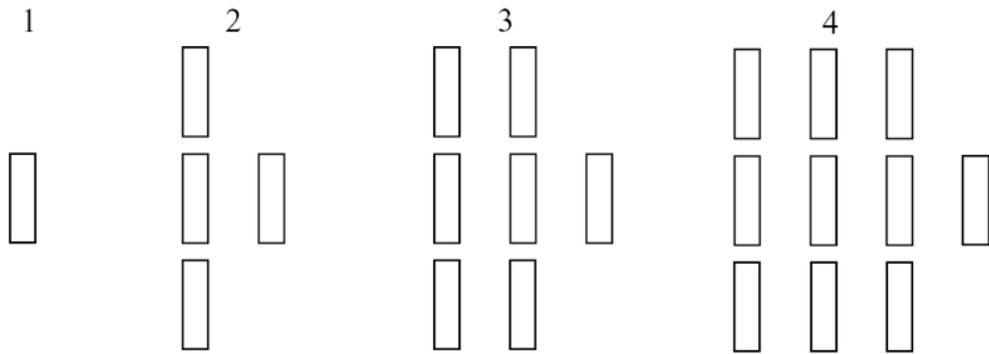
(b) What is the price in Hi-Fi gear?

Answer: £..... **(2 marks)**

(c) How much more does the DVD player cost in TVs Direct?

Answer: £..... **(1 mark)**

20. The picture shows a sequence made from sets of wooden rods.



(a) Write down the numbers of rods in each of the first 4 sets.

Answer: (1 mark)

(b) Write down the next two numbers in the sequence.

Answer: (2 marks)

(c) Write down a rule which explains how to get the next number in the sequence.

Answer: (1 mark)

(d) Write down a rule which explains how to get the number in the sequence by knowing its position in the sequence.

Answer: (2 marks)

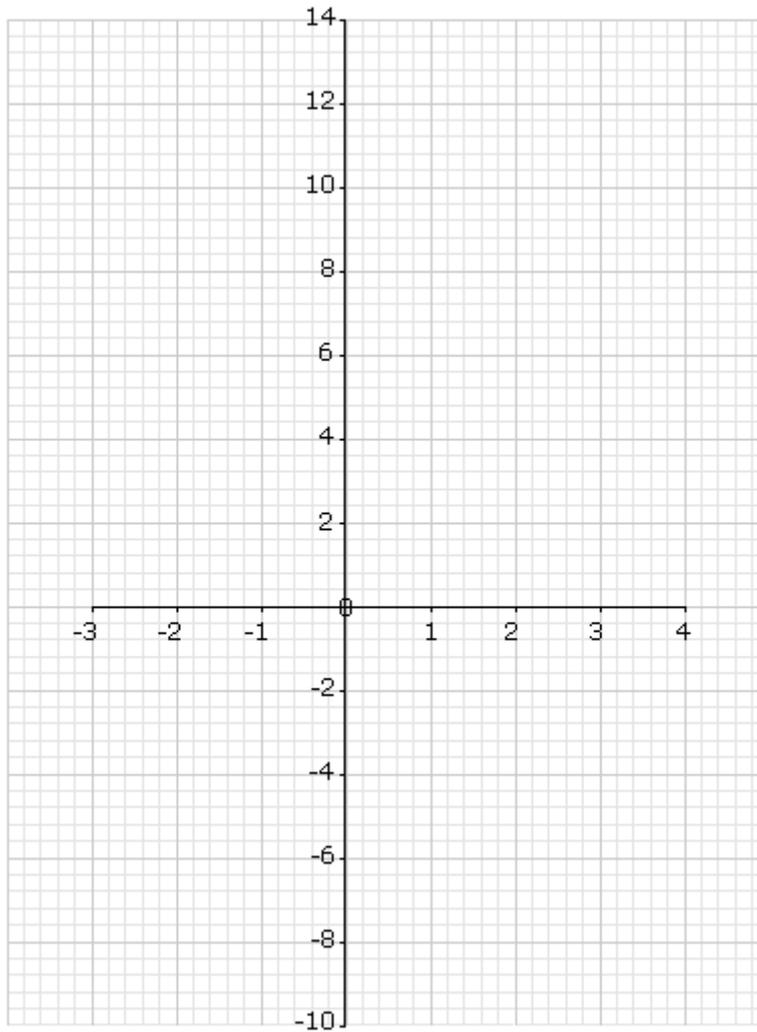
21. (a) Complete the table for the equation $y = 3x + 1$

x	-3	-2	-1	0	1	2	3	4
y								

(3 marks)

(b) Draw the graph of $y = 3x + 1$

(2 marks)



(c) Add the line $y = 7$ to your graph.

(1 mark)