



GCSEBITESIZE 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.

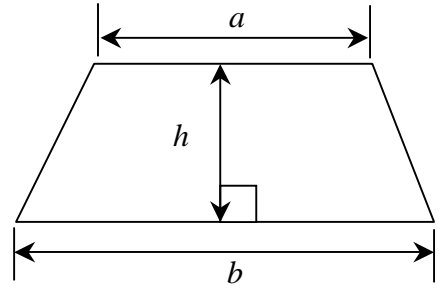
In addition to this paper you will require:

- an angle measure
- a pair of compasses
- tracing paper

Formulae Sheet: Foundation Tier

You may use the following formulae:

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



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

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

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.....
.....

Answer: (1 mark)

- (b) Calculate 26×19

.....
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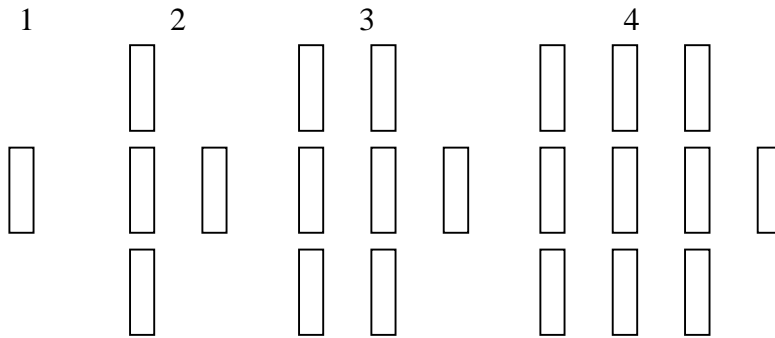
Answer: (1 mark)

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

.....
.....
.....

Answer: (1 mark)

2. 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.

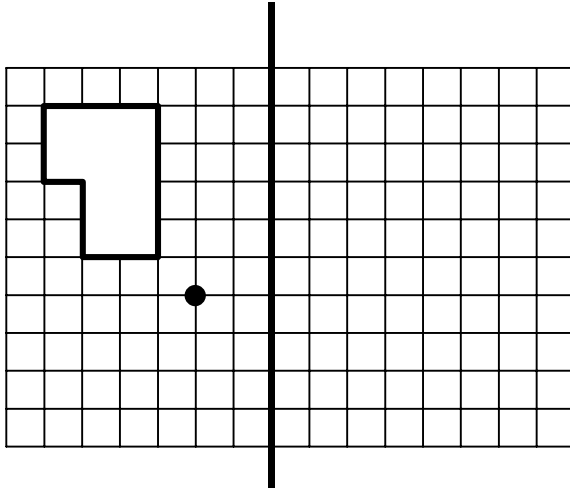
Answer: (1 mark)

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

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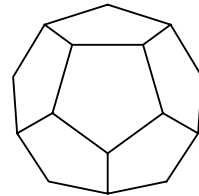
Answer: (2 marks)

3. (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 centre. (2 marks).

4. 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)

5. 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?

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.....

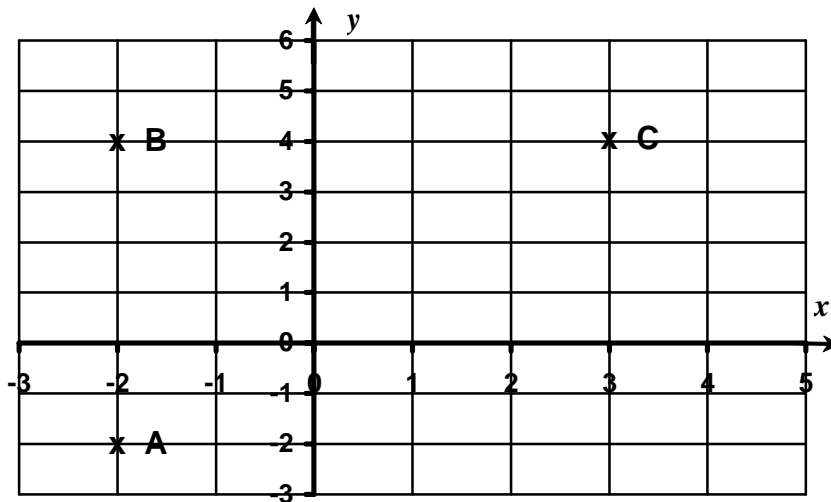
Answer: (2 marks)

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

.....

Answer: (1 mark)

6.



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

A (..... ,) B (..... ,) C (..... ,) (2 marks)

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

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

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

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

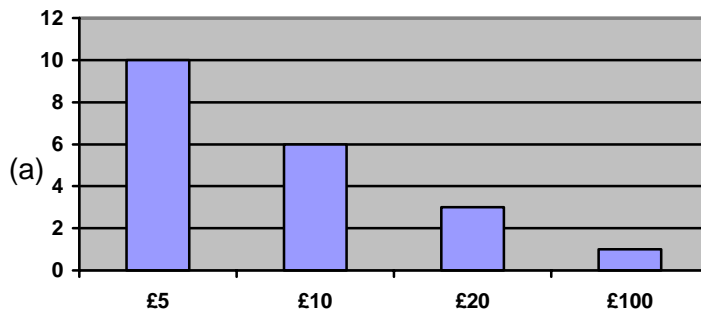
(2 marks)

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

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

(2 marks)

8. The chart shows the number of winners of each prize in a local lottery one week.



- (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?

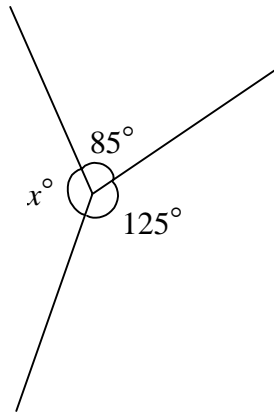
Answer: (1 mark)

- (d) Calculate the mean prize.

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.....
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.....

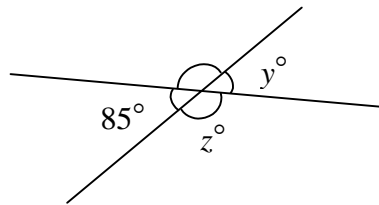
Answer: (3 marks)

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



Answer $x =$ (1 mark)

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



Answers $y =$ $z =$ (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)

10. (a) Estimate the value of $\frac{3.9 \times 7.1}{1.97}$

.....
.....

Answer: (2 marks)

(b) Estimate the value of

(i) 2.1^3
Answer:..... (1 mark)

(i) $\sqrt{47}$
Answer:..... (1 mark)

11. (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 $5x - 2 = 13$

.....
.....

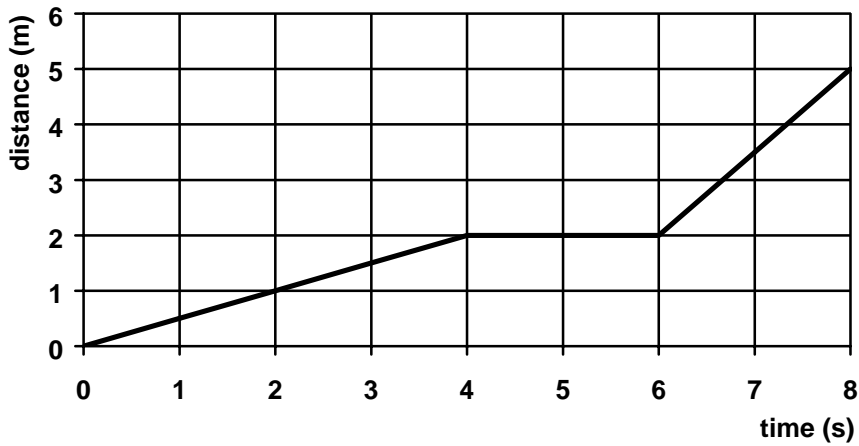
Answer: (1 mark)

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

.....
.....

Answer: (2 marks)

12. 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:..... (1 mark)

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

Answer:..... (1 mark)

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

.....

Answer: (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)

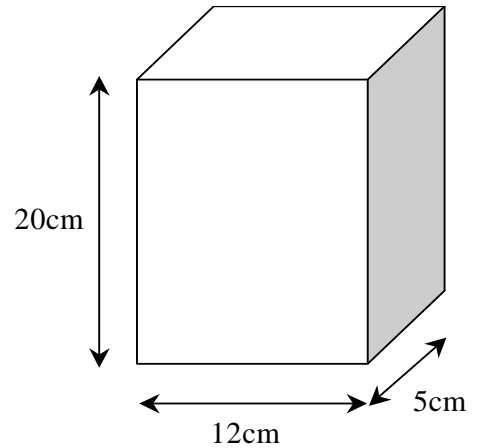
13. Rakesh and Tina share out £40 in the ratio 5:3 in that order. How much do they each get?

.....

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

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

.....



Answer: (2 marks)

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

.....

 (2 marks)

- (c) A new designer suggests adding 20% to all 3 dimensions to make the new box. Would this work? Explain your answer.

.....

 (2 marks)

15. (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)

16. A small survey looked at the favourite TV magazine for 90 people. The results are shown in the table.

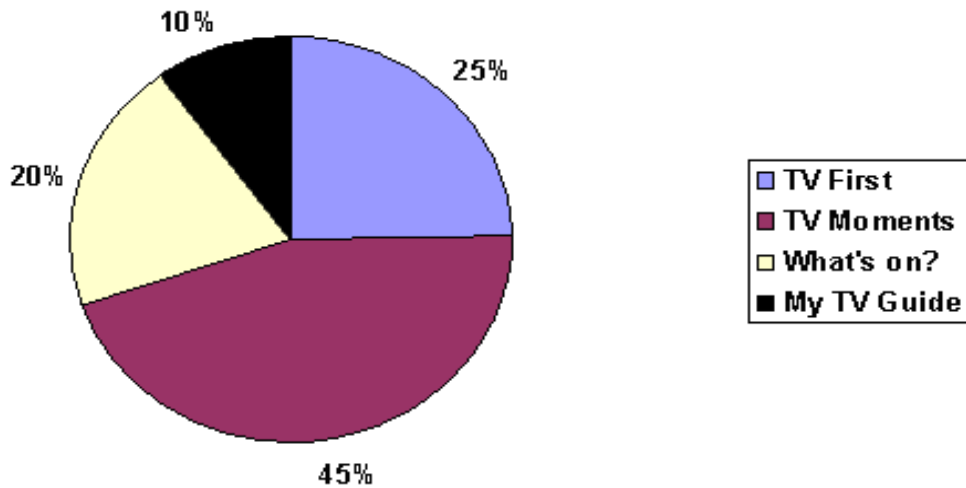
Magazine	People
TV First	22
TV Moments	40
What's on?	
My TV Guide	

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

.....
.....

Answer: (2 marks)

(b)



How many people chose *My TV guide*?

.....
.....

Answer: (2 marks)

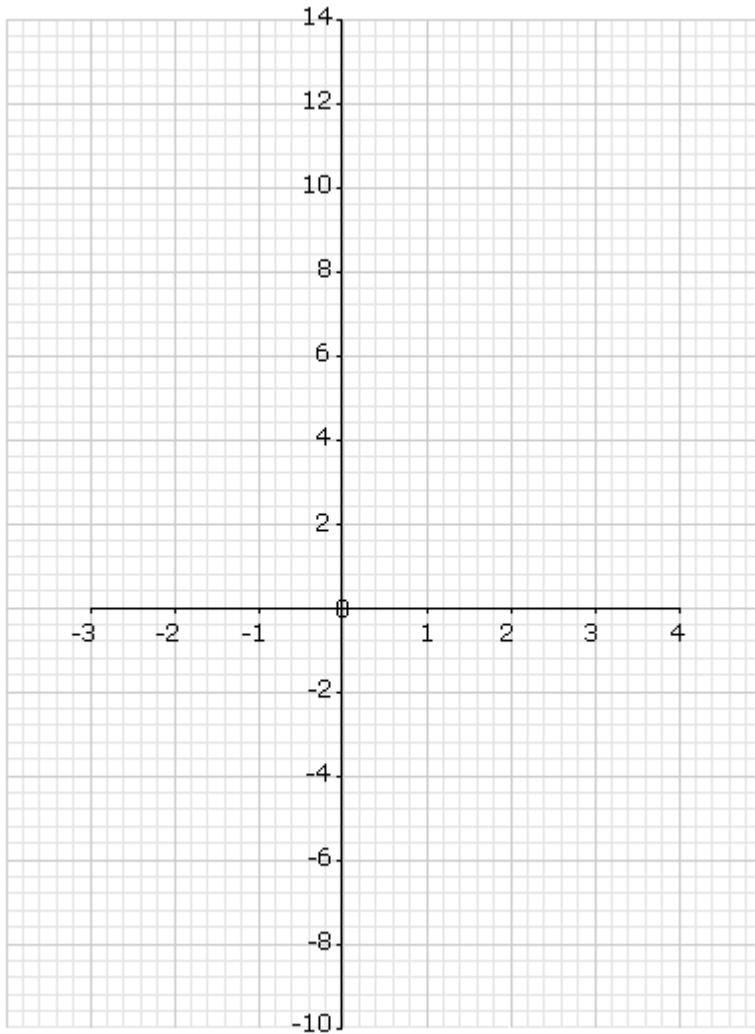
17. (a) Complete the table for the equation $y = 3x + 1$

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.

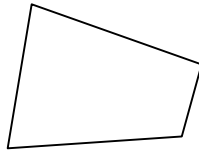
(1 mark)

(d) Use your graph to find the solution to $3x + 1 = 7$

.....
.....

Answer: (2 marks)

18. (a) Rotate the shape through 90° anti-clockwise using the centre marked as a cross.

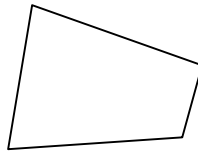


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(2 marks)

- (b) Draw an enlargement scale factor 2 using the centre marked as a cross.

×



(2 marks)

- (c) Circle the transformations under which the image would be congruent to the object.

Translation

Rotation

Enlargement

Reflection

(1 mark)

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

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

Answer: (2 marks)

(b) If the cost of manufacture is £70 for tables and £22 for chairs, how much does it cost to make all the tables and chairs in this order?

.....
.....
.....
.....

Answer: (2 marks)

(c) 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)

20. (a) What is an eight sided polygon called?

Answer: (1 mark)

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

.....
.....

Answer: (2 marks)

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

.....
.....

Answer: (1 mark)