



**GCSEBITESIZE Examinations**

**General Certificate of Secondary Education**

**Specimen Paper**

**MATHEMATICS**  
**FOUNDATION TIER**

**Paper 2 Calculator**

**Time allowed: 1 hour 30 minutes.**

The maximum mark for this paper is 100.

Mark allocations are shown in brackets.

Show clearly how you work out your answer.

Use of a calculator is permitted

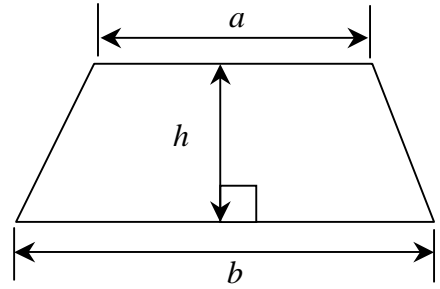
In addition to this paper you will require:

- a calculator
- mathematical instruments
- tracing paper

## Formulae Sheet: Foundation Tier

You may use the following formulae:

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



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

1. (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)

2. (a) A family order two teas, two coffees and a milkshake. Work out the total bill.

.....  
.....  
.....  
.....  
.....  
.....  
.....(2 marks)

Menu	
Soft Drinks	75p
Milk	60p
Milkshake	£1.20
Tea	90p
Coffee	£1.10
Hot Chocolate	£1.20

- (b) They pay with a £10 note. What will the change be?

.....  
.....  
.....  
..... (2 marks)

3. Write down the next two numbers in the following sequences:

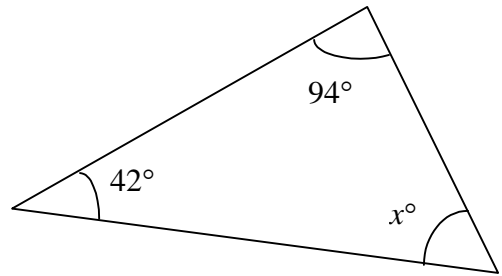
- (a) 2, 7, 12, 17, 22, ..... , ..... (1 mark)

- (b) 16, 13, 10, 7, 4, ..... , ..... (1 mark)

- (c) 0, 3, 8, 15, 24, ..... , ..... (2 marks)

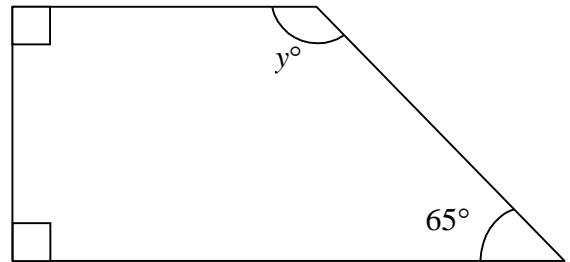
4. (a) Work out the size of angle  $x$ .

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



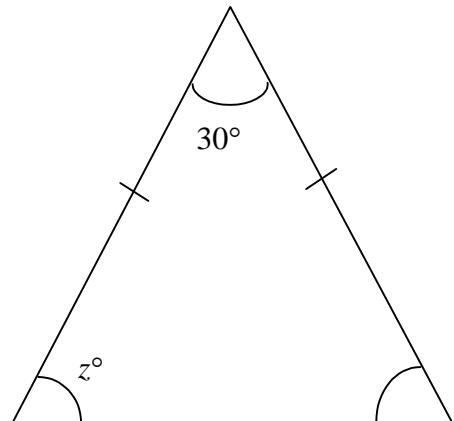
- (b) Work out the size of angle  $y$ .

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



- (c) The triangle is isosceles.  
 Work out the size of angle  $z$ .

.....  
 .....  
 .....  
 Answer:..... (2 marks)



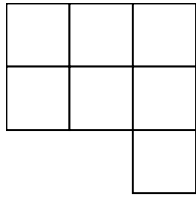
5. (a) Two friends earn £120 for some work they have done. They divide it up in the ratio 5:3. How much is the larger share?

.....  
 .....  
 Answer:..... (2 marks)

- (b) If they had divided the money in the ratio 7:5 how much more would the smaller share be than it was in part (a)?

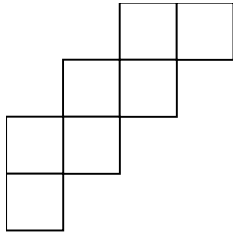
.....  
 .....  
 Answer: ..... (2 marks)

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



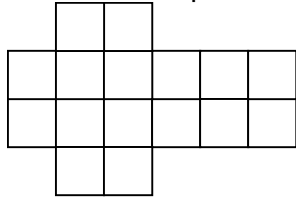
(1 mark)

- (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)

7. (a) What is the positive square root of 64?

.....  
 .....

Answer: ..... (1 mark)

- (b) Work out:  $2^3 + 4^2$

.....  
 .....

Answer: ..... (2 mark)

- (c) Write in words the number  $10^5$

.....  
 .....

Answer: ..... (1 mark)

8. Andrea has 237 DVDs in her collection. She has bought some new storage boxes which hold 42 DVDs each.

(a) How many of the boxes will she need for her whole collection?

.....  
 .....  
 ..... (2 marks)

(b) How many spaces will be left in the box which isn't full?

.....  
 .....  
 ..... (1 mark)

(c) The boxes cost £7.95 each. How much does she spend?

.....  
 .....  
 ..... (2 marks)

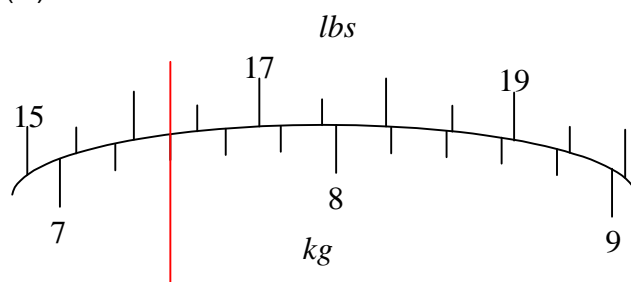
9. (a) Roughly how many pints are there in 12 litres?

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

(b) A builder asked for a 20 inch length of pipe. What would be the rough metric equivalent length in centimetres?

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

(c) Read the amount shown on this dial in both kilogrammes (kg) and pounds (lb)

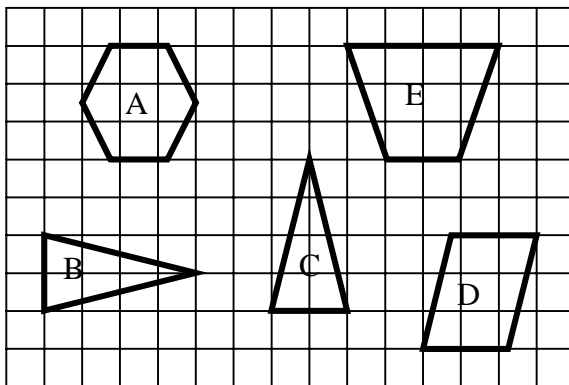


Answer:.....kg.....lb (2 marks)

10. (a) Fill in the table of names for the shapes shown:

Shape	Name
	Isosceles Triangle
	Parallelogram

(2 marks)



(b) Which shapes form a congruent pair?

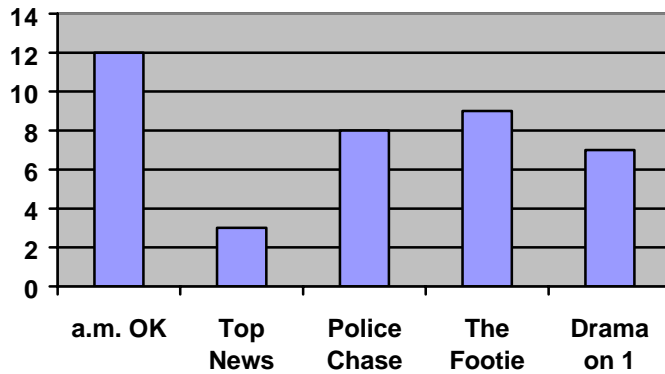
Answer: ..... (1 mark)

(c) Fill in the table showing the number of lines of symmetry for each shape.

Shape	Number of lines of symmetry
A	
B	
C	
D	
E	

(2 marks)

11. A survey was done asking people to name their favourite TV programme. The results are shown in the chart.



- (a) Which was the most popular programme?  
 .....  
 Answer: ..... (1 mark)
- (b) How many more people said "Police Chase" than said "Top News"?  
 .....  
 Answer: ..... (1 mark)
- (c) How many people were asked altogether?  
 .....  
 .....  
 ..... (2 marks)
- (d) If one of these people were chosen at random, what is the probability that they had said "Drama on 1"?  
 Answer: ..... (2 marks)

12. This is an exchange rate card from a travel agent's office.

	GBP (£) 1 =
USD	1.82
Euro	1.43

- (a) A business woman is travelling to New York. She changes £750 to US dollars (\$). How much does she get?  
 .....  
 .....  
 ..... (2 marks)
- (b) A French company is buying goods in the UK. They change 1000 Euros into GB pounds (£). How much will they get (to the nearest pound).  
 .....  
 .....  
 ..... (2 marks)



13. (a) Write the following in order of size, smallest first.

0.65,  $\frac{2}{3}$ , 7%,  $\frac{6}{7}$ , 68%

.....  
.....  
Answer: ..... (2 marks)

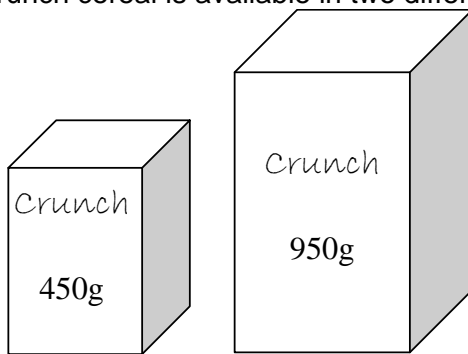
(b) What is  $\frac{2}{7}$  of £3.56, to the nearest penny.

.....  
.....  
Answer: ..... (2 marks)

(c) A mini-disc player is priced at £75. It is put in the sale at 15% off. What is the new price?

.....  
.....  
.....  
Answer: ..... (2 marks)

14. Crunch cereal is available in two different sizes.



Now  
85p

Only  
£1.20

(a) Work out the cost of 100g of Crunch when bought in the 450g box (to the nearest whole pence)

.....  
.....  
.....  
..... (2 marks)

(b) Work out the cost of 450g of Crunch when bought in the 950g box (to the nearest whole pence).

.....  
.....  
.....  
..... (2 marks)

(c) Which is the better buy? Give one reason in support of each size.

.....  
.....  
.....  
..... (2 marks)

15. This is a list of the ages of customers who shopped in a newsagent's one day:

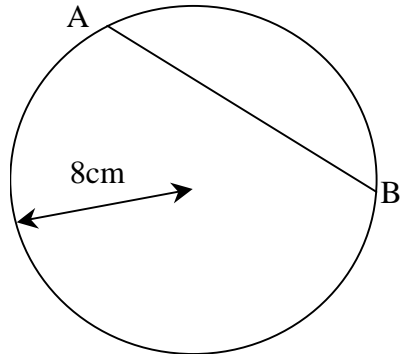
4, 7, 23, 14, 8, 7, 40, 81, 45, 1

- (a) What is the mode of the ages?  
.....  
.....  
Answer: ..... (2 marks)
- (b) Find the median of the ages.  
.....  
.....  
Answer: ..... (2 marks)
- (c) Work out the mean of the ages.  
.....  
.....  
Answer: ..... (2 marks)
- (d) Explain why the mode is not a good measure of average for this data.  
.....  
.....  
..... (1 mark)
- (e) Which is the best measure – median or mean? Justify your answer.  
.....  
.....  
..... (2 marks)

16. The circle shown has radius 8cm.

(a) What name is given to the line AB?

Answer: ..... (1 mark)



(b) Calculate the area of the circle. Give your answer to 1 decimal place.

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

Answer: ..... (3 marks)

(c) The circle is a picture of a wooden wheel. If it was rolled three times round along a floor, how far would it travel?

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

Answer: ..... (3 marks)

17. A class contains 13 boys and 17 girls. A student is chosen at random.

(a) What is the probability that a girl is chosen?

.....  
.....

Answer: ..... (1 mark)

7 of the students have blue eyes, 5 have green eyes and the rest have brown eyes.

(b) What is the probability that a student with brown eyes is chosen?  
(Simplify your answer)

.....  
.....

Answer: ..... (2 marks)

No boys have green eyes and half of the brown eyed students are boys.

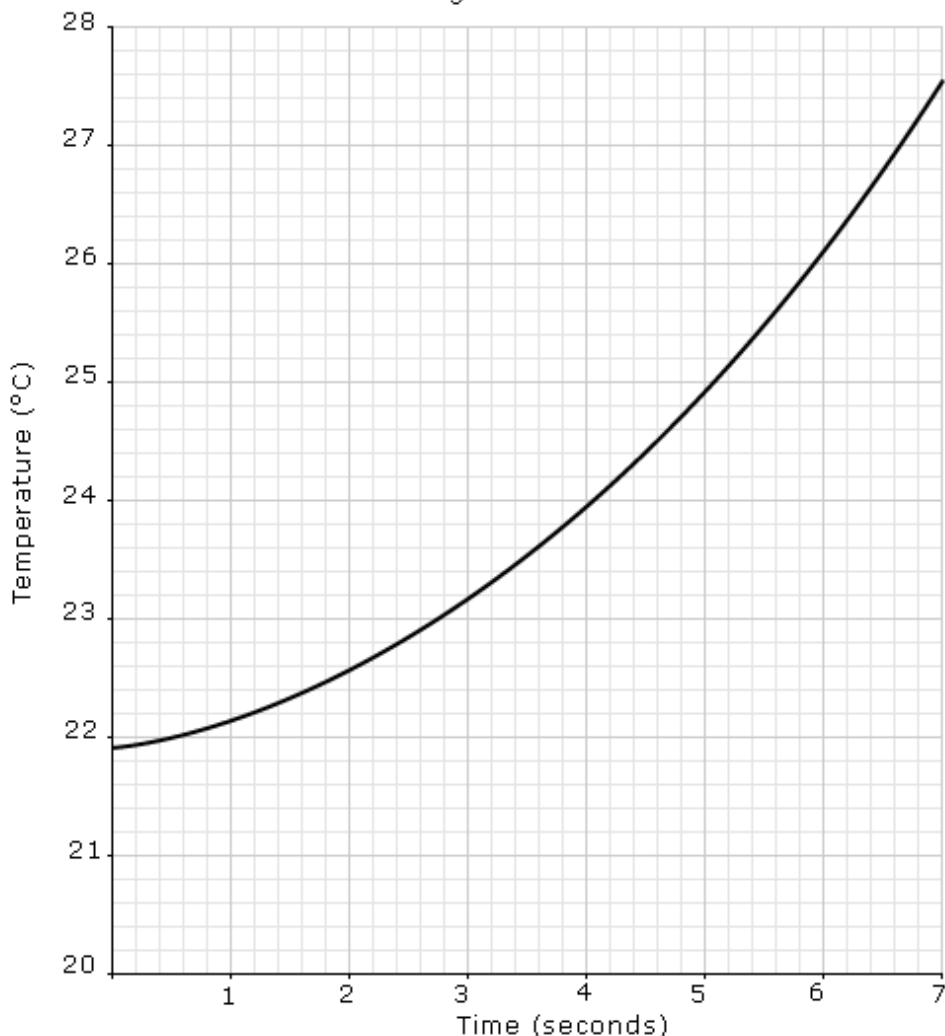
(c) What is the probability that the chosen student does not have green eyes?

.....  
.....

Answer: ..... (2 marks)

18. The graph shows the temperature of a solution in an experiment.

Heating rate of Solution



(a) Reading from the graph, what is the temperature after 4 seconds?

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

(b) Reading from the graph, how long did it take for the temperature to reach 27°?

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

(c) What was total rise in temperature in the first 7 seconds?

.....  
.....  
..... (2 marks)

(d) If the experiment carried on, estimate the temperature after 8 seconds.

Answer: ..... (2 marks)

19. Given that  $a = 3$ ,  $b = 7$  and  $c = -2$  :

(a) What is the value of  $2a + b$  ?

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

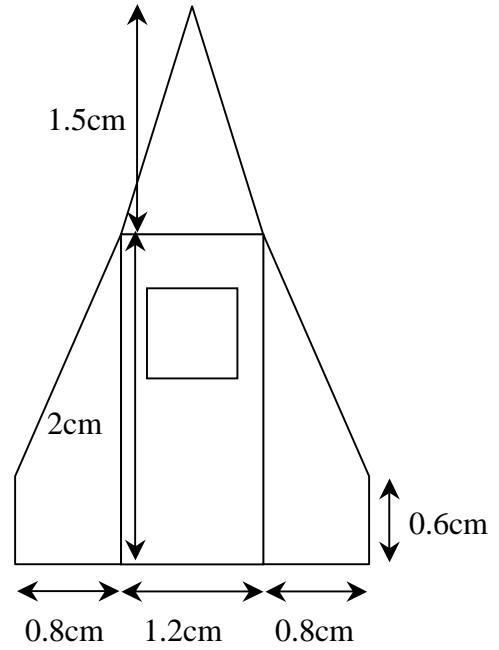
(b) What is the value of  $2c^2$  ?

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

(c) Solve the equation  $ax + b = 22$

.....  
 Answer: ..... (2 marks)

20. A rocket design is made from gold leaf. The square window has side length of 0.9cm. It is cut out and removed. Calculate the total area of the design. Show your calculations for each part separately.



Square: .....

Rectangle: .....

Triangle: .....

Trapezium: .....

Whole design: .....

..... (6 marks)