



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 110.

Mark allocations are shown in brackets.

Show clearly how you work out your answer.

Use of a calculator is permitted

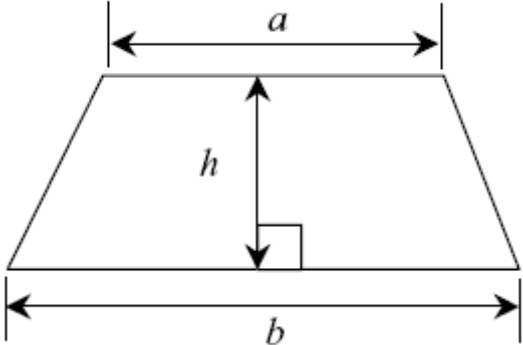
In addition to this paper you will require:

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

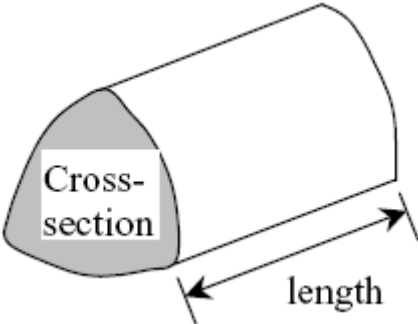
Formulae Sheet: Foundation Tier

You may use the following formulae:

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



Volume of prism = area of cross section \times length



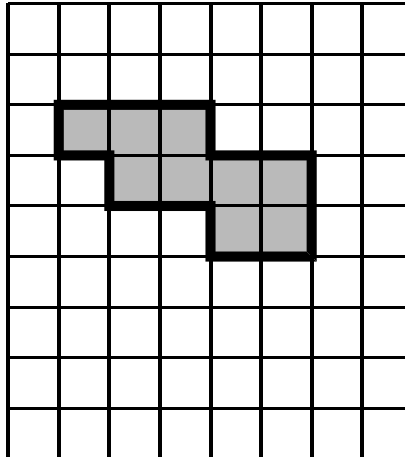
1. Write down the next two numbers in the following sequences:

(a) 2, 7, 12, 17, 22, , **(1 mark)**

(b) 16, 13, 10, 7, 4, , **(1 mark)**

(c) 0, 3, 8, 15, 24, , **(2 marks)**

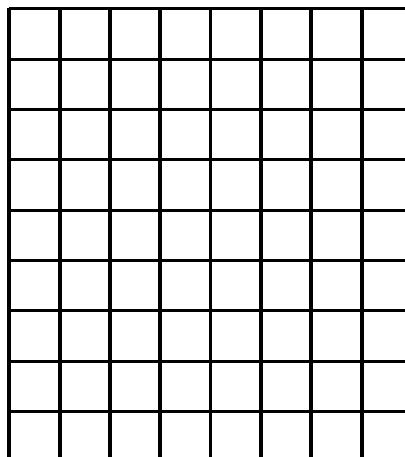
2. This shape has been drawn on a centimetre grid:



(a) (i) Find the area of the shape cm² **(1 mark)**

(ii) Find the perimeter of the shape cm **(2 marks)**

(b) On the grid below draw a shape with a perimeter of 16cm:



(2 marks)

3. Calculate:

(a) $4 + 10$

(1 mark)

(b) $4 - 3$

(1 mark)

(c) 5×7

(2 marks)

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

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

£.....**(2 marks)**

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

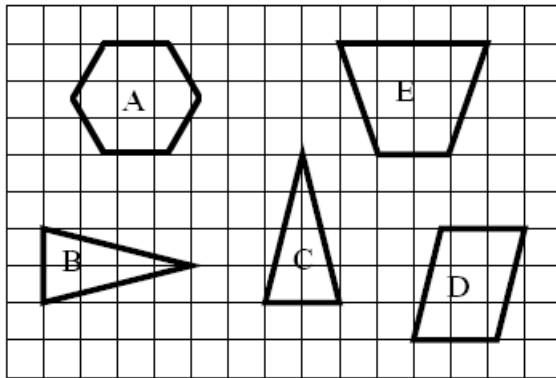
£.....

(2 marks)

5. (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)

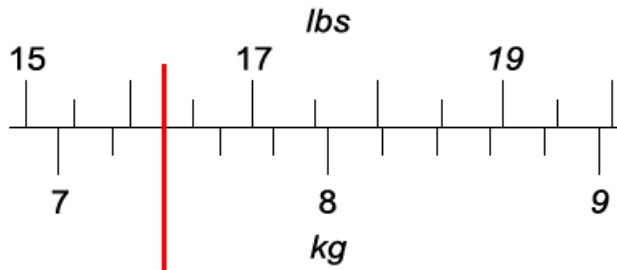
6. (a) Roughly how many pints are there in 12 litres?

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)

7. (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)

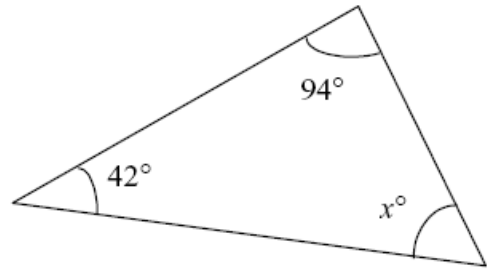
(c) A mini-disc player is priced at £75. It is put in the sale at 15% off. What is the new price?

Answer: £..... (2 marks)

8. (a) (i) Work out the size of angle x .

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

Answer:..... ° (1 mark)



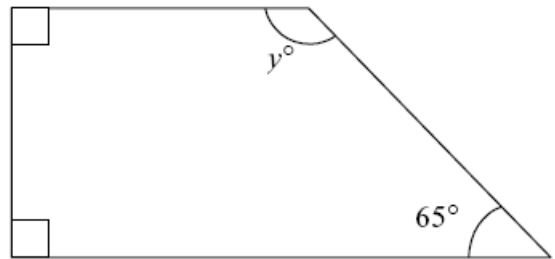
(ii) Give a reason for your answer.

Answer: ° (1 mark)

(b) (i) Work out the size of angle y .

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

Answer:..... ° (1 mark)



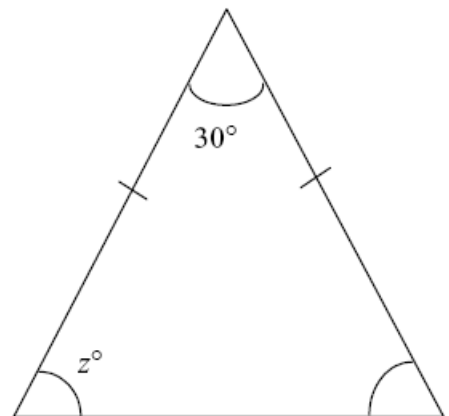
(ii) Give a reason for your answer.

Answer: ° (1 mark)

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

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

Answer:..... ° (2 marks)



9. 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)

10. (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)

11. Carl is p years old. Danny is five years older than Carl.

(a) Write down an expression for Danny's age.

Answer: (2 marks)

Ed is half Carl's age.

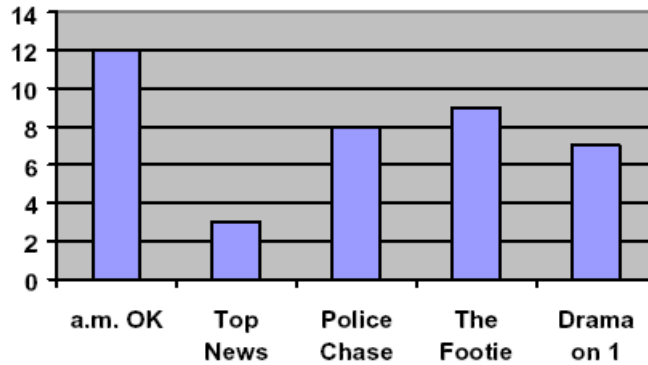
(b) Write down an expression for Ed's age.

Answer: (2 marks)

12. Leroy buys a TV for £400 plus VAT at 17½%. How much does he pay for the TV?

Answer: £..... (3 marks)

13. 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?

Answer: (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)

14. 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)**

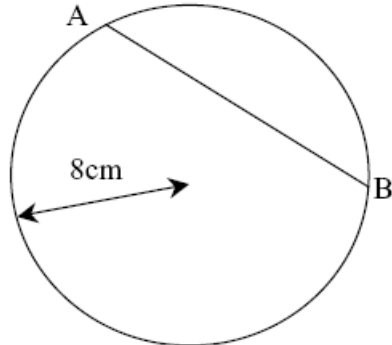
(c) The boxes cost £7.95 each. How much does she spend?

£..... **(2 marks)**

15. 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: cm² (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:m (3 marks)

16. 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)

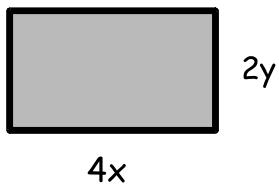
17. (a) Write $\frac{40}{96}$ in its simplest form.

Answer: (2 marks)

- (b) Write 25:40:15 in its simplest form.

Answer: (2 marks)

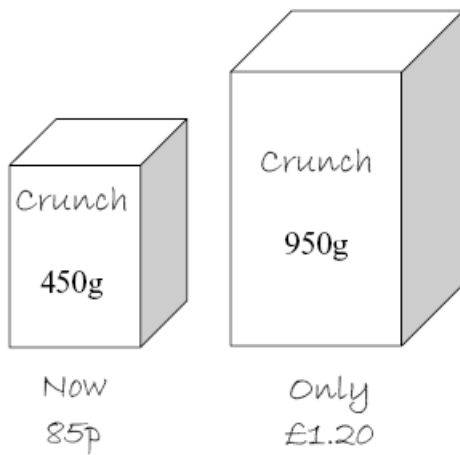
18. Write down an expression for the perimeter of this rectangle:



Give your answer as simply as possible.

Answer: (3 marks)

19. Crunch cereal is available in two different sizes.



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

.....p **(2 marks)**

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

.....p **(2 marks)**

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

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

20. 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)**

21. 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)**

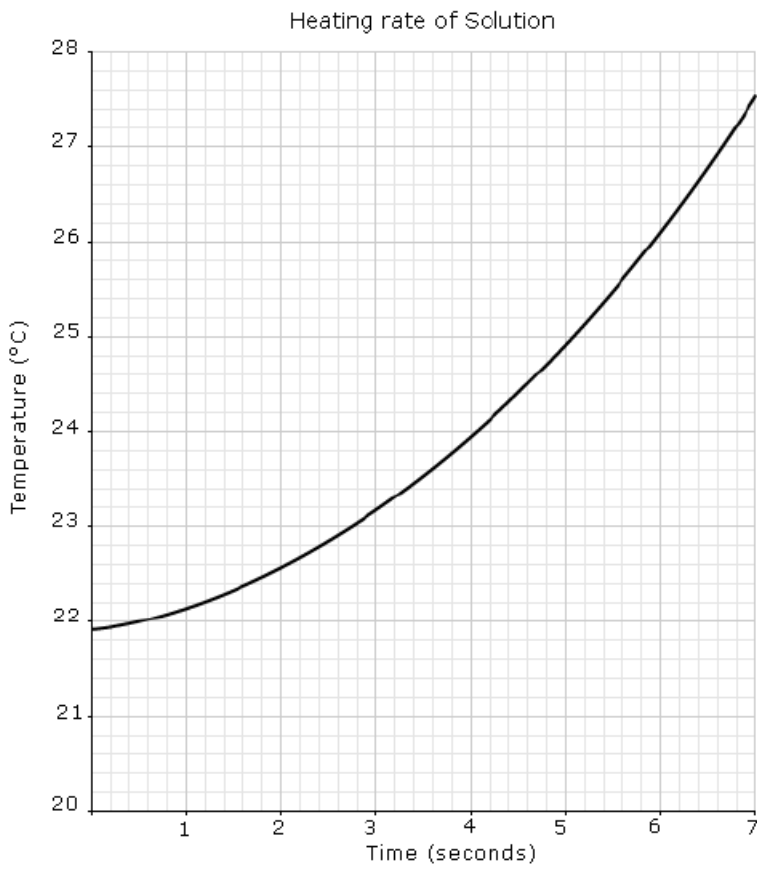
(d) Explain why the mode is not a good measure of average for this data.

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

(e) Which is the best measure – median or mean? Justify your answer.

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

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



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

Answer:°C **(1 mark)**

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

Answer:s **(1 mark)**

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

Answer:°C **(2 marks)**

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

Answer:°C **(2 marks)**

23. The equation $x^2 + 3x = 20$ has a solution between $x = 3$ and $x = 4$.

Use trial and improvement to find the value of x correct to 1 decimal place.

Show **all** your working.

Answer: $x = \dots\dots\dots$ **(4 marks)**