CALC E

GCSE Mathematics · Foundation Tier

40 marks · 45 minutes · Calculator

Name ..... **Class** .....

Answer all questions. Show all your working. Calculators may be used. Diagrams are NOT accurately drawn.

1 Here are five temperatures.

–3.5 °C 2 °C –7 °C 0.5 °C –1 °C

Write the temperatures in order. Start with the coldest.

.....

(Total for Question 1 is 1 mark)

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2 Find the lowest common multiple (LCM) of 18 and 24

.....

(Total for Question 2 is 2 marks)

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3 **(a)** Write $\frac{7}{20}$ as a percentage.

..... %

(1)

(b) Which is larger, $\frac{5}{8}$ or 0.6? You must show how you decide.

.....

(1)

(Total for Question 3 is 2 marks)

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4 A television costs £385 plus VAT. VAT is charged at 20%

Work out the total cost of the television.

£.....

(Total for Question 4 is 2 marks)

5 **P = 2(l + w)**

Work out the value of P when $l = 7.4$ and $w = 3.9$

$P =$ .....

(Total for Question 5 is 2 marks)

6 Here are the test scores of 7 students in class B.

45 72 58 63 39 70 51

(a) Find the median score.

.....

(1)

For class A, the median score is 61 and the range is 20

(b) Compare the scores of class A and class B.

.....

.....

.....

(2)

(Total for Question 6 is 3 marks)

7 Each exterior angle of a regular polygon is 24°

(a) How many sides does the polygon have?

.....

(1)

(b) Work out the size of each interior angle of the polygon.

..... °

(1)

(Total for Question 7 is 2 marks)

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8 Jay spins a four-sided spinner, numbered 1 to 4, 80 times. It lands on 4 a total of 26 times.

(a) Write down the relative frequency of the spinner landing on 4

.....

(1)

(b) Jay spins the spinner 200 more times. Estimate how many times it will land on 4

.....

(1)

(c) Do you think the spinner is fair? Give a reason for your answer.

.....

.....

(1)

(Total for Question 8 is 3 marks)

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9 **(a)** Solve $\frac{x + 7}{3} = 5.2$

$x =$ .....

(2)

(b) Solve $2x^2 = 98$

$x =$ .....

(1)

(Total for Question 9 is 3 marks)

10 Here is a recipe for pancakes.

Pancakes for 6 people

300 g plain flour
2 eggs
450 ml milk

Sami wants to make pancakes for 15 people.

He has 700 g of plain flour, 6 eggs and 1.2 litres of milk.

Does Sami have enough of each ingredient? You must show all your working.

(Total for Question 10 is 3 marks)

11 A map has a scale of 1 : 50 000

On the map, the distance between two villages is 6.8 cm.

Work out the real distance between the villages. Give your answer in kilometres.

..... km

(Total for Question 11 is 2 marks)

12 The circumference of a circle is 40 cm.

Work out the radius of the circle. Give your answer correct to 1 decimal place.

..... cm

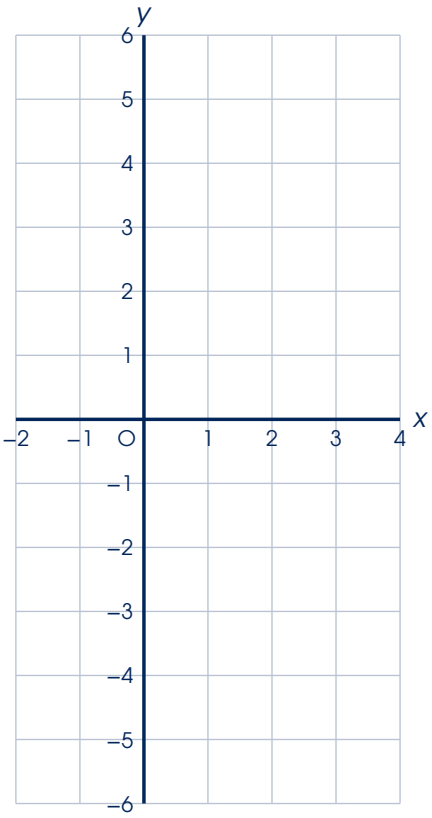
(Total for Question 12 is 2 marks)

13 **(a)** Complete the table of values for $y = 2x - 3$

x	−1	0	1	2	3
y					

(1)

(b) On the grid, draw the graph of $y = 2x - 3$ for values of x from −1 to 3



(2)

(Total for Question 13 is 3 marks)

14 **(a)** Write 0.00047 in standard form.

.....

(1)

The mass of the Earth is 5.97×10^{24} kg. The mass of the Moon is 7.35×10^{22} kg.

(b) How many times heavier is the Earth than the Moon? Give your answer to 3 significant figures.

.....

(2)

(Total for Question 14 is 3 marks)

15 A wooden block is a cuboid measuring 20 cm by 15 cm by 8 cm.

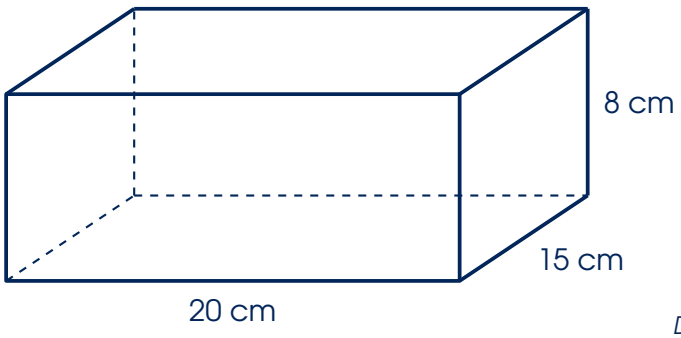


Diagram NOT accurately drawn

The density of the wood is 0.65 g/cm^3.

A box can hold a maximum mass of 10 kg.

What is the greatest number of these blocks that can be put in the box?

.....

(Total for Question 15 is 4 marks)

16 A ramp rises 0.6 m over a horizontal distance of 4.5 m.

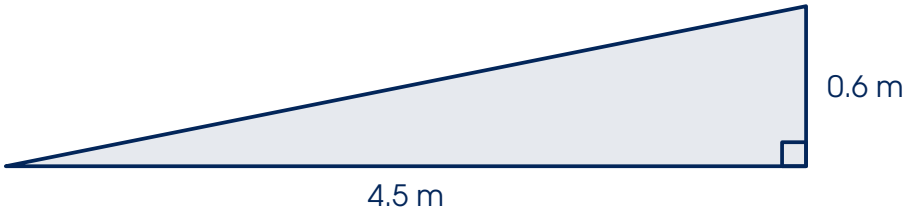


Diagram NOT accurately drawn

A ramp is safe to use if its angle with the horizontal is less than 8°

Is this ramp safe to use? You must show all your working.

(Total for Question 16 is 3 marks)

TOTAL FOR PAPER IS 40 MARKS