CALC J

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 **(a)** Work out the value of 7^3

.....

(1)

(b) Work out the value of $\sqrt{1.69}$

.....

(1)

(Total for Question 1 is 2 marks)

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2 **(a)** Write the ratio 45 : 75 in its simplest form.

.....

(1)

(b) Write the ratio 3 : 5 in the form 1 : n

.....

(1)

(Total for Question 2 is 2 marks)

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3 **(a)** Change 3.4 km into centimetres.

..... cm

(1)

(b) Change 2.5 hours into minutes.

..... minutes

(1)

(Total for Question 3 is 2 marks)

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4 **(a)** Simplify $4p \times 3q$

.....

(1)

(b) Simplify $m^5 \times m^3$

.....

(1)

(Total for Question 4 is 2 marks)

5 The table shows the number of goals scored by a football team in 30 matches.

Number of goals	Frequency
0	6
1	9
2	7
3	5
4	3

(a) Work out the mean number of goals scored per match.

.....

(2)

The coach says, "The mean number of goals is greater than the median."

(b) Is the coach correct? You must show how you get your answer.

.....

(1)

(Total for Question 5 is 3 marks)

6 A circular pond has a diameter of 3.6 m.

(a) Work out the circumference of the pond. Give your answer correct to 1 decimal place.

..... m

(2)

Ian is going to put a fence all the way around the edge of the pond.

Fencing is sold in whole metres. It costs £8.40 per metre.

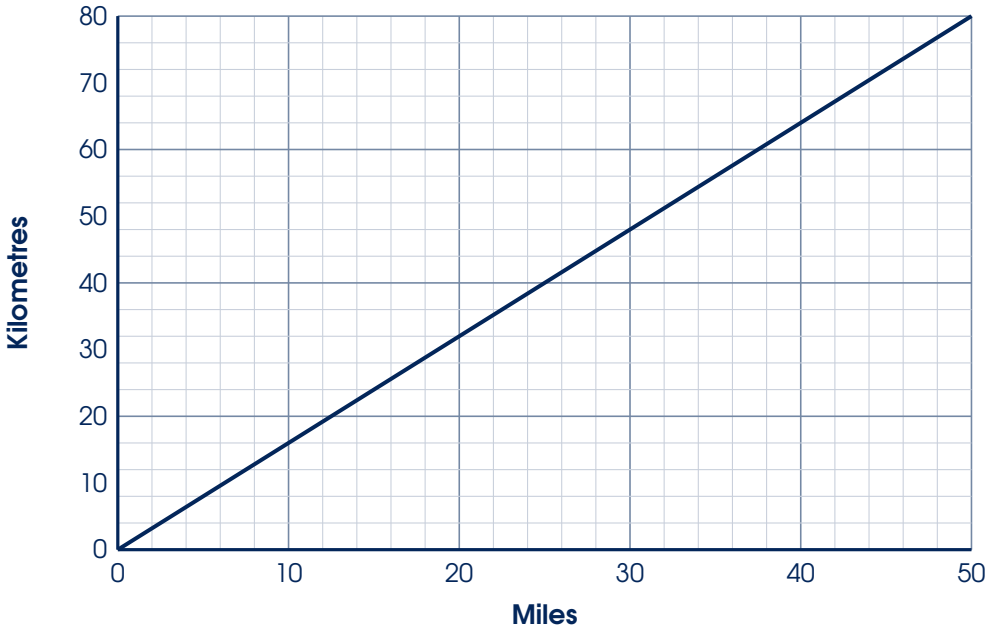
(b) Work out the cost of the fencing Ian needs to buy.

£.....

(1)

(Total for Question 6 is 3 marks)

7 You can use this graph to convert between miles and kilometres.



(a) Use the graph to change 30 miles into kilometres.

..... km

(1)

(b) Use the graph to change 200 kilometres into miles.

..... miles

(2)

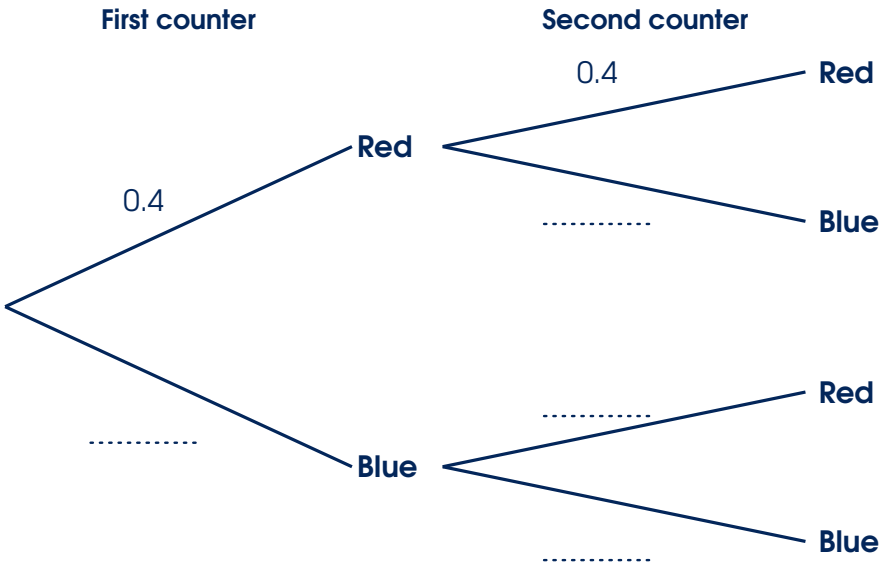
(Total for Question 7 is 3 marks)

8 A bag contains 4 red counters and 6 blue counters.

Zak takes a counter at random, writes down its colour and puts it back in the bag.

He then takes a second counter at random.

(a) Complete the probability tree diagram.



(1)

(b) Work out the probability that both counters are blue.

.....

(2)

(Total for Question 8 is 3 marks)

9 **(a)** Work out the value of 2.7^4

Write down all the figures on your calculator display.

.....

(1)

(b) Write your answer to part (a) correct to 2 significant figures.

.....

(1)

(Total for Question 9 is 2 marks)

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10 The scale of a map is 1 : 25 000

On the map, the distance between two villages is 7.4 cm.

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

..... km

(Total for Question 10 is 2 marks)

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11 The price of a house went up from £185 000 to £207 200

An estate agent says, "The price went up by more than 10%."

Is the estate agent correct? You must show how you get your answer.

(Total for Question 11 is 2 marks)

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12 Kai thinks of a number.

He multiplies the number by 4 and then subtracts 7

His answer is the same as when he adds 11 to the number.

What number did Kai think of?

.....

(Total for Question 12 is 3 marks)

13 A train travels 186 km in 1 hour 30 minutes.

A car travels the same 186 km at an average speed of 110 km/h.

How many more minutes does the car take than the train?

Give your answer correct to the nearest minute.

..... minutes

(Total for Question 13 is 4 marks)

14 *A* is the point (2, 3). *B* is the point (8, 11).

Work out the length of the line segment *AB*.

..... units

(Total for Question 14 is 3 marks)

15 Amy, Ben and Cal share some prize money.

Amy gets $\frac{2}{5}$ of the prize money.

Ben and Cal share the rest of the prize money in the ratio 3 : 1

Cal gets £180

Work out the total amount of prize money.

£.....

(Total for Question 15 is 4 marks)

TOTAL FOR PAPER IS 40 MARKS