Mathematics

November 2017 Paper 1 (Non Calculator)
Part 1 (First half of the paper)
Edexcel Foundation Tier

Time: 45 minutes

Q	Topic	Max Mark	My Marks
1	Metric Conversions	2	
2	Order of Operations (BIDMAS)	1	
3	Solving Equations	1	
4	Adding Negative Numbers	1	
5	Sequences (Term toTerm)	1	
6	Writing an Expression/Formula	3	
7	Coordinates	4	
8	Area, Factors	2	
9	Division	1	
10	Averages, Stem and Leaf	2	
11	Calculation Problem, Direct Proportion	3	
12	Two Way Tables	4	
13	Volume and Surface Area	4	
14	Ordering Fractions, Equivalent Fractions	3	
15	Ratio to Fraction/Percentage	2	
16	Estimation, Percentage Decrease	5	
17	Probability, Systematic Listing	2	
	Total	41	

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Answer ALL questions.

Write your answers in the spaces provided.

You must write down all the stages in your working.

1 (a) Change 365 cm into metres.

.... m

(1)

(b) Change 2.7 kg into grams.

.... g

(1)

(Total for Question 1 is 2 marks)

2 Work out $2 + 7 \times 10$

....

(Total for Question 2 is 1 mark)

3 Solve $\dfrac{y}{4} = 10.5$

$y =$ ....

(Total for Question 3 is 1 mark)

4 Here are four numbers.

$-9 \qquad -2 \qquad 2 \qquad 9$

Write one of these numbers in each box to make a correct calculation.

$$\boxed{} + \boxed{} = -7$$

(Total for Question 4 is 1 mark)

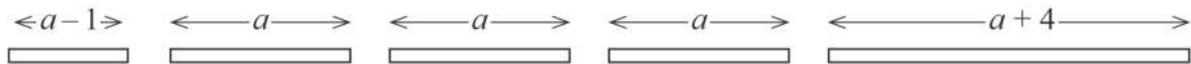**5** Here are the first four terms of a number sequence.

$$2 \qquad 5 \qquad 11 \qquad 23$$

The rule to continue this sequence is

multiply the previous term by 2 and then add 1

Work out the 5th term of this sequence.

....

(Total for Question 5 is 1 mark)

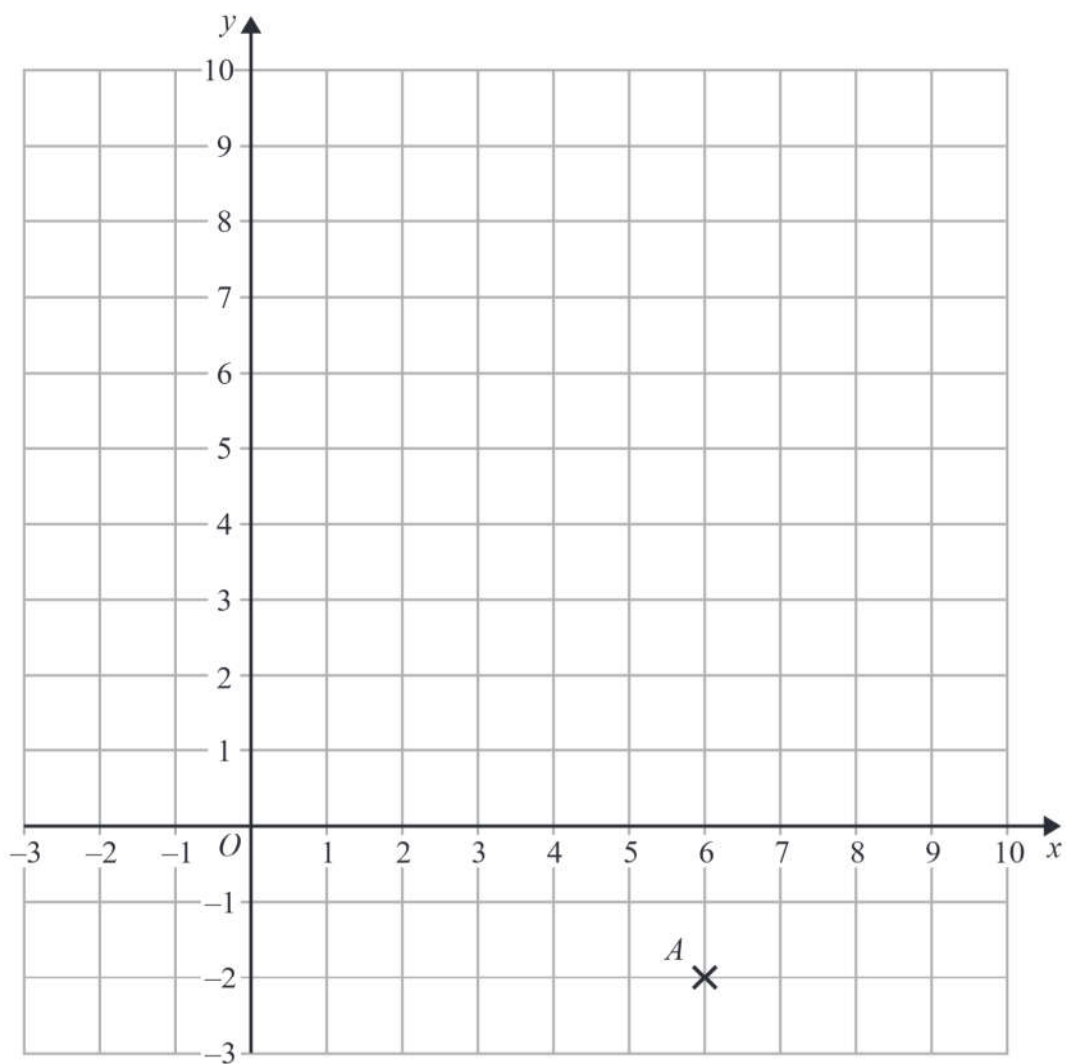**6** Here are five straight rods.

All measurements are in centimetres.

The total length of the five rods is L cm.

Find a formula for L in terms of a.
Write your formula as simply as possible.

....

(Total for Question 6 is 3 marks)

7

(a) Write down the coordinates of the point A.

(........................ , ...)

(1)

(b) (i) Plot the point with coordinates (2, 9).
Label this point *B*.

(1)

(ii) Does point *B* lie on the straight line with equation $y = 4x + 1$?
You must show how you get your answer.

....

....

(1)

(c) On the grid, draw the line with equation $x = -2$

(1)

(Total for Question 7 is 4 marks)

8   The length of a rectangle is twice as long as the width of the rectangle.
The area of the rectangle is $32\,cm^2$.

Draw the rectangle on the centimetre grid.

(Total for Question 8 is 2 marks)

Turn over ▶

9 Jacqui wants to work out $3480 \div 5$

She knows that $3480 \div 10 = 348$

Jacqui writes $\qquad 3480 \div 5 = 174$

because $\qquad 10 \div 5 = 2$

and $\qquad 348 \div 2 = 174$

What mistake did Jacqui make in her method?

....

....

(Total for Question 9 is 1 mark)

10 Jake and Sarah each played a computer game six times.

Their scores for each game are shown below.

| Jake | 10 | 9 | 8 | 11 | 12 | 8 |
| Sarah | 2 | 10 | 7 | 14 | 4 | 10 |

(a) Who had the most consistent scores, Jake or Sarah?
You must give a reason for your answer.

....

....

(1)

Jake played a different game 20 times.

The stem and leaf diagram shows information about his scores.

```
0 | 9
1 | 2 3 3 4 5
2 | 5 6 6 6 6 7
3 | 1 3 4 6 8
4 | 0 2 9
```
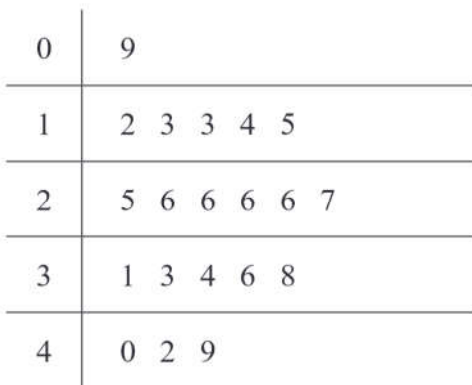
Key
1 | 2 represents 12 points

Jake said his modal score was 6 points because 6 occurs most often in the diagram.

(b) Is Jake correct?
You must explain your answer.

....

....

(1)

(Total for Question 10 is 2 marks)

11 There are 30 children in a nursery school.
At least 1 adult is needed for every 8 children in the nursery.

(a) Work out the least number of adults needed in the nursery.

....

(2)

2 more children join the nursery.

(b) Does this mean that more adults are needed in the nursery?
You must give a reason for your answer.

....

(1)

(Total for Question 11 is 3 marks)

12 Emma has 45 rabbits.

30 of the rabbits are male.
8 of the female rabbits have short hair.
12 of the rabbits with long hair are male.

(a) Use the information to complete the two-way table.

	Male	Female	Total
Long hair			
Short hair			
Total			

(3)

One of Emma's rabbits is chosen at random.

(b) Write down the probability that this rabbit is a female with short hair.

....

(1)

(Total for Question 12 is 4 marks)

13 The total surface area of a cube is $294\,cm^2$.

Work out the volume of the cube.

.... cm^3

(Total for Question 13 is 4 marks)

14 Here are two fractions.

$$\frac{7}{5} \qquad \frac{5}{7}$$

Work out which of the fractions is closer to 1
You must show all your working.

(Total for Question 14 is 3 marks)

Turn over ▶

15 There are only red buttons, yellow buttons and orange buttons in a jar.
The number of red buttons, the number of yellow buttons and the number of orange buttons are in the ratio $7:4:9$

Work out what percentage of the buttons in the jar are orange.

.... %

(Total for Question 15 is 2 marks)

16 Berenika wants to buy 35 T-shirts.

Each T-shirt costs £5.80
Berenika does the calculation $40 \times 6 = 240$ to estimate the cost of 35 T-shirts.

(a) Explain how Berenika's calculation shows the actual cost will be less than £240

....

....

(1)

There is a special offer.

> T-shirts £5.80 each.
>
> Buy 30 or more T-shirts.
> Get 10% off the total cost.

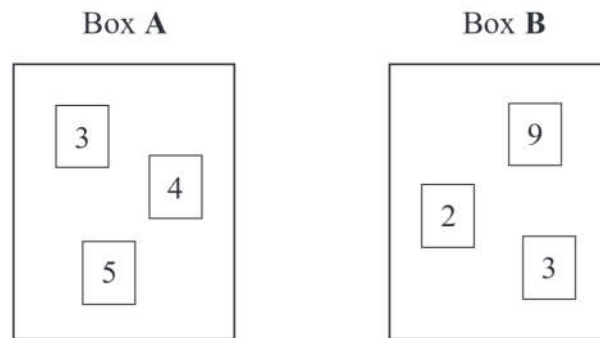(b) Work out the actual cost of buying 35 T-shirts using the special offer.

£...

(4)

(Total for Question 16 is 5 marks)

17 There are 3 cards in Box **A** and 3 cards in Box **B**.
There is a number on each card.

Box **A**

Box **B**

3

4

5

9

2

3

Ryan takes at random a card from Box **A** and a card from Box **B**.
He adds together the numbers on the two cards to get a total score.

Work out the probability that the total score is an odd number.

....

(Total for Question 17 is 2 marks)