Write your name here

Surname	Other Names

Mathematics
November 2018 Paper 2 (Calculator Allowed)
Part 1 (First half of the paper)
Edexcel Foundation Tier

Time: 45 minutes

Q	Topic	Max Mark	My Marks
1	Place Value	1	
2	Powers	1	
3	Metric Conversions	2	
4	Powers and Roots	1	
5	Fractions, Decimals and Percentages	1	
6	Ordering Fractions	2	
7	Simplifying Algebra	2	
8	Scale Drawing	2	
9	Sequences, Nth Term, Term to Term	4	
10	Function Machines	3	
11	Percentage of Amount	3	
12	Writing Probability	2	
13	Area, Perimeter	5	
14	Probability, Systematic Listing	4	
15	Percentage of Amount, Simple Interest	3	
16	Transformations	2	
17	Calculation Problems, Proportion	3	
	Total	41	

For worked solutions and video solutions visit mathsgenie.co.uk

Answer ALL questions.

Write your answers in the spaces provided.

You must write down all the stages in your working.

1   Write down the value of the 4 in the number 542.3

....

(Total for Question 1 is 1 mark)

2   Write down a square number that is also an odd number.

....

(Total for Question 2 is 1 mark)

3   (a) Change 4560 g into kg.

............................kg

(1)

(b) Change 7.3 m into mm.

............................mm

(1)

(Total for Question 3 is 2 marks)

4   Work out the cube root of 64

....

(Total for Question 4 is 1 mark)

5   Write 0.31 as a fraction.

....

(Total for Question 5 is 1 mark)

P 5 5 5 8 7 A 0 2 2 0

6 Here are four fractions.

$$\frac{3}{4} \qquad \frac{5}{7} \qquad \frac{19}{25} \qquad \frac{11}{15}$$

Write the fractions in order of size.
Start with the smallest fraction.

....

(Total for Question 6 is 2 marks)

7 (a) Simplify $3m - m - m + 3m$

....

(1)

(b) Simplify $2 \times n \times p \times 4$

....

(1)

(Total for Question 7 is 2 marks)

8 A map has a scale of 1 cm to 14 km.

On the map, the distance between Manchester and London is 18.8 cm.

What is the real distance, in km, between Manchester and London?

.... km

(Total for Question 8 is 2 marks)

9 (a) The nth term of a sequence is $3n + 4$

Explain why 21 is not a term of this sequence.

....

....

(2)

(b) Here are the first three terms of a different sequence.

$$1 \qquad 2 \qquad 4$$

Write down two numbers that could be the 4th term and the 5th term of this sequence.
Give the rule you have used to get your numbers.

....

....

....

(2)

(Total for Question 9 is 4 marks)

10 Here is a number machine.

input $\longrightarrow$ $\boxed{\times 5}$ $\longrightarrow$ $\boxed{-2}$ $\longrightarrow$ output

(a) Work out the **output** when the input is 8

....

(1)

(b) Work out the **input** when the output is 28

....

(2)

(Total for Question 10 is 3 marks)

11 Adam gets a bonus of 30% of £80
Katy gets a bonus of £28

Work out the difference between the bonus Adam gets and the bonus Katy gets.

£.....................................

(Total for Question 11 is 3 marks)

12 There are 49 counters in a bag.

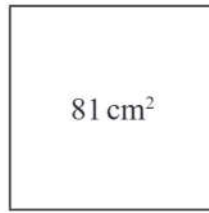20 of the counters are red.
The rest of the counters are blue.

One of the counters is taken at random.

Find the probability that the counter is blue.

....

(Total for Question 12 is 2 marks)

13 A square has an area of $81\,\text{cm}^2$

$$81\,\text{cm}^2$$

(a) Find the perimeter of the square.

....cm

(2)

The diagram shows a right-angled triangle and a parallelogram.

16 cm 9 cm

h cm 30 cm
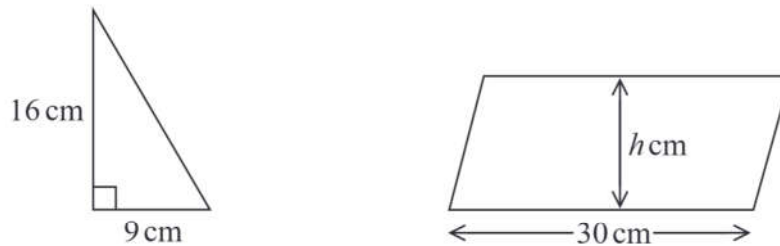
The area of the parallelogram is 5 times the area of the triangle.
The perpendicular height of the parallelogram is h cm.

(b) Find the value of h.

$h =$ ....

(3)

(Total for Question 13 is 5 marks)

14 Victoria throws an ordinary fair 6-sided dice once.

She says,

"The probability of getting a 3 is half the probability of getting a 6"

(a) Is Victoria correct?
You must explain your answer.

....

....

(1)

Andy throws the dice twice.
He says,

"The probability of getting a 6 on both throws is $\frac{2}{6}$"

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

....

....

(1)

Indre throws the dice once.
She also throws a coin to get Heads or Tails.

(c) List all the possible outcomes she can get.

....

....

....
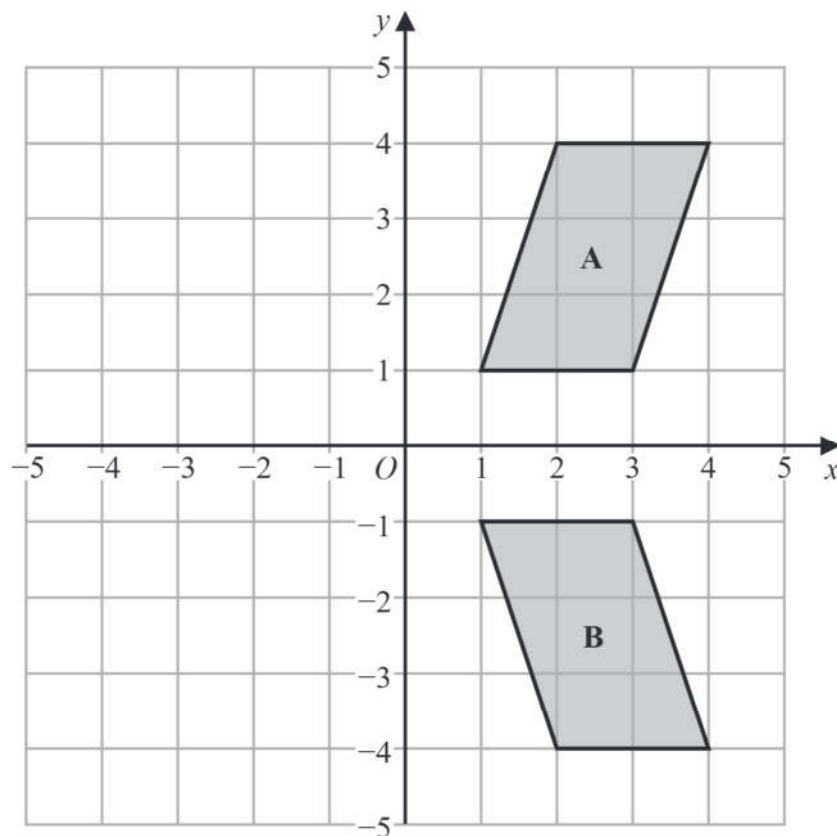
(2)

(Total for Question 14 is 4 marks)

15 Remi invests £600 for 5 years in a savings account.
By the end of the 5 years he has received a total of £75 simple interest.

Work out the annual rate of simple interest.

....%

(Total for Question 15 is 3 marks)

16

Describe fully the single transformation that maps shape **A** onto shape **B**.

....

(Total for Question 16 is 2 marks)

17 Adrian is going to make concrete.
He is going to use

   180 kg of cement
   375 kg of sand
   1080 kg of stone

Cement, sand and stone are sold in bags.

1 bag cement	1 bag sand	1 bag stone
25 kg	22.5 kg	50 kg

Adrian already has

   10 bags of cement
   20 bags of sand
   20 bags of stone

Work out what bags he needs to buy to make the concrete.