

**SIMPLE ALGEBRA, RATION AND SEQUENCES**  
**GCSE EDEXCEL (Higher)**  
**Past Papers Questions**  
**(Non Calculator)**

1 Given that  $1793 \times 185 = 331\,705$

write down the value of

(a)  $1.793 \times 185$

.....

(b)  $331\,705 \div 1.85$

.....

**(Total for Question 1 is 2 marks)**

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2 Write 525 as a product of its prime factors.

.....

**(Total for Question 5 is 3 marks)**

3 One sheet of paper is  $9 \times 10^{-3}$  cm thick.

Mark wants to put 500 sheets of paper into the paper tray of his printer.  
The paper tray is 4 cm deep.

Is the paper tray deep enough for 500 sheets of paper?  
You must explain your answer.

(Total for Question 15 is 3 marks)

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4 Write these numbers in order of size.  
Start with the smallest number.

$5^{-1}$       0.5      -5       $5^0$

.....  
(Total for Question 19 is 2 marks)

5 (a) Work out  $\frac{1}{7} \times \frac{2}{3}$

.....  
(1)

(b) Work out  $\frac{3}{5} - \frac{1}{3}$

.....  
(2)

**(Total for Question 1 is 3 marks)**

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**6**

**Competition**

a prize every 2014 seconds

In a competition, a prize is won every 2014 seconds.

Work out an estimate for the number of prizes won in 24 hours.

You must show your working.

**(Total for Question 13 is 4 marks)**

7  $x = 3$

(a) Work out the value of  $4x^2$

.....  
(1)

(b) Solve  $5x + 4 = 14 + x$

$x =$  .....  
(2)

**(Total for Question 2 is 3 marks)**

8 (a) Work out  $1\frac{1}{5} \times 2\frac{1}{3}$

Give your answer as a mixed number in its simplest form.

.....  
(3)

(b) Work out  $2\frac{7}{15} - 1\frac{2}{3}$

.....  
(3)

**(Total for Question 18 is 6 marks)**

9 (a) Simplify  $x^7 \times x^5$

.....  
(1)

(b) Simplify  $2y \div y$

.....  
(1)

$$v = 2t^2$$

$$t = 3$$

(c) Work out the value of  $v$ .

.....  
(1)

(d) Give an example to show that, when  $n$  is a whole number,  $6n + 1$  is **not** always a prime number.  
You must give your value of  $n$ .

$n =$  .....  
(1)

**(Total for Question 1 is 4 marks)**

10 Here are the first five terms of an arithmetic sequence.

2    5    8    11    14

(a) Write down an expression, in terms of  $n$ , for the  $n$ th term of this sequence.

.....  
(2)

(b) Is 299 a term of this sequence?  
You must give a reason for your answer.

.....  
.....  
(2)

(c) Write down an expression, in terms of  $n$ , for the  $(n + 1)$ th term of this sequence.

.....  
(1)

**(Total for Question 10 is 5 marks)**

11 Babajan makes breakfast cereal.  
She mixes nuts, raisins and oats in the ratio 3 : 2 : 5 by weight.

On Monday, Babajan uses 60 grams of nuts.

(a) Work out the weight of raisins and the weight of oats she uses to make the breakfast cereal.

raisins .....grams

oats.....grams

(3)

On Tuesday, Babajan makes 300 grams of the breakfast cereal.

500 grams of nuts cost £8

(b) Work out the cost of the nuts used to make 300 grams of the breakfast cereal.

£.....

(3)

**(Total for Question 6 is 6 marks)**