

MATHEMATICS ENTRANCE EXAMINATION  
ENTRY TO YEAR 9, SAMPLE PAPER

Time Allowed: 60 minutes

1. (a). Write down the first six multiples of 18.

(2)

(b). Find the Lowest Common Multiple of 12 and 18.

(1)

**(Total: 3 marks)**

2. Simplify

(a)

(2)

(b)

(2)

**(Total: 4 marks)**

3. If  $600 = 2^3 \times 3 \times 5^2$  and  $108 = 2^2 \times 3^3$  find:

(a) The Highest Common Factor

(b) The Lowest Common Multiple

(2)

(c) Write 96 as a product of its prime factors.

(2)

.....

(3)

**(Total: 7 marks)**

4.

(a) Simplify the ratio  $15 : 25$

(b) Alex and Beth divide £30 in the ratio  $2 : 3$   
How much do they each get?

(c) Charlie and David divide some money in the ratio  $7 : 2$   
David gets £56. Find the total amount of money they split.

5. Find the value of the following. You must show your workings to gain any credit, and fully simplify any fractions.

(a)  $\frac{1}{2} - \frac{1}{3}$

(2)

(b)  $\frac{2}{3} - \frac{1}{4}$

[Give your answer as an improper fraction or mixed number]

(3)

(c)  $\frac{3}{4} - \frac{1}{2}$

[Give your answer as a mixed number]

(4)

**(Total: 9 marks)**

6. Expand

(a)

(b)

(c)

(1)

(2)

(2)  
**(Total: 5 marks)**



9. Solve, giving answers as fractions where appropriate.

(a)

(b)

(2)

(c)

¢

(3)

10.

(a) If  $2x + 3y = 10$  and  $x = 2$ , work out the value of  $y$ .

$$y = \dots\dots\dots$$

(2)

(b) If  $3x + 2y = 12$  and  $y = 3$ , work out the value of  $x$ .

$$x = \dots\dots\dots$$

(2)

**(Total for question: 4 marks)**

11. A box containing tomatoes has a total mass of  $4\frac{1}{2}$  kg. The box, when empty, has a mass of  $1\frac{1}{2}$  kg. What is the mass of the tomatoes? Give your answer as a mixed number.

**(Total: 4 marks)**