

Topic 2 Number (Post-TT) [39]

1.

- (a) Write down a fraction that is between $\frac{1}{2}$ and $\frac{3}{4}$

(1)

- (c) Work out $3\frac{1}{4} - 1\frac{2}{5}$

(3)

(Total 4 marks)

2.

- (a) Express 96 as a product of its prime factors.
Give your answer in index form.

(3)

- (b) Find the Highest Common Factor (HCF) of 36 and 96.

(2)

(Total 5 marks)

3.

- (a) Write the number 0.00756 in standard form.

(1)

- (b) The Earth is approximately a sphere of radius 6400 km.
The surface area of a sphere is given by the formula $A = 4\pi r^2$.
Calculate the approximate surface area of the Earth.
Give your answer in standard form.

(3)

(Total 4 marks)

4.

- (a) Simplify

(i) $y^7 \times y^2$ (1)

(ii) $y^7 \div y^2$ (1)

(iii) $(y^7)^2$ (1)

- (b) (i) If $y = -1$ which answer in part (a) is positive? (1)

- (ii) If $y = 0.5$ which answer in part (a) has the greatest value? (1)

(Total 5 marks)

5.

Here are three fractions.

$$\frac{3}{8} \quad \frac{5}{16} \quad \frac{2}{5}$$

Which fraction is closest to $\frac{1}{4}$?

You **must** show your working.

(Total 3 marks)

6. Non-calculator

Work out the value of $(9 \times 10^{-4}) \times (3 \times 10^7)$
Give your answer in standard form.

(Total 2 marks)

7.

Simplify $4x^2y^3 \times 2x^3y^4$

(Total 2 marks)

8.

(a) Work out $2\frac{1}{4} \times 3\frac{1}{3}$

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

(b) Write the numbers 3, 4, 5 and 6 in the boxes to give the greatest possible total.
You may write each number only once.

$$\begin{array}{|c|} \hline \square \\ \hline \end{array} \frac{1}{\begin{array}{|c|} \hline \square \\ \hline \end{array}} + \begin{array}{|c|} \hline \square \\ \hline \end{array} \frac{2}{\begin{array}{|c|} \hline \square \\ \hline \end{array}}$$

(Total 4 marks)

9.

Add together 5.1×10^7 and 3.89×10^6

(Total 2 marks)

10.

(a) Write $\frac{4}{9}$ as a recurring decimal.

(b) Write $0.\dot{2}6$ as a fraction in its lowest terms.

(Total 5 marks)

11.

Liz buys packets of coloured buttons.

There are 8 red buttons in each packet of red buttons.

There are 6 silver buttons in each packet of silver buttons.

There are 5 gold buttons in each packet of gold buttons.

Liz buys equal numbers of red buttons, silver buttons and gold buttons.

How many packets of each colour of buttons did Liz buy?

(Total 3 marks)