PRISM WORLD

Std.: 9 (English) **Maths - I** **Marks: 20**

Date: **Time: 1 hour**

Chapter: 4

Q.1 A) Choose the correct alternative. **(2)**

1) The ratio of 4 litres to 900 mL is

a. 4 : 9 b. 40 : 9 c. 9 : 40 d. 20 : 9

2) Two number are in the ratio 3:7 and their difference is 36. Find the number.

a. First number is 27 and Second number is 63.

b. First number is 83 and second number is 27.

c. First number is 72 and Second number is 36.

d. None of the above

B) Solve the following questions. **(2)**

1)

If $\frac{a}{b} = \frac{5}{8}$, find the value of the following ratios : b : a

2) Express the following percentages as ratios in the reduced form.

52:100

= _____

= _____

= _____

Q.2 A) Complete the following Activities. (Any one) **(2)**

1) Convert the following ratios into percentages.

37 : 500

Solution:

$\frac{37}{500} \times$ _____

= _____

=_____

2) The ratio of length and breadth of a rectangle is 3 : 1, and its perimeter is 36 cm. Find the length and breadth of the rectangle.

Solution:

∴ length : breadth

∴ 3 : 1

Let the common multiple be x

∴ 2_____ = 36

$\therefore$ 4x = _____

$\therefore$ x = _____

$\therefore$ length = 3x = 3 $\times$ 4.5 = _____ cm

$\therefore$ breadth = 1x = 1 $\times$ 4.5 = 4.5 cm

B) Solve the following questions. (Any two) **(4)**

1) If the product of two numbers is 360 and their ratio is 10 : 9, then find the numbers.

2) Find the mean proportion of : $\frac{1}{12}$ and $\frac{1}{75}$

3) Find the ratio of the first quantity with the second in its simplest form.
Rs.11, Rs.15 and paise 40

Q.3 Solve the following questions. (Any one) **(3)**

1) If $\frac{a}{(x-2y+3z)} = \frac{b}{(y-2z+3x)} = \frac{c}{(z-2x+3y)}$ and x + y + z $\neq$ 0 then prove that each ratio = $\frac{a+b+c}{2(x+y+z)}$.

2) If $\frac{by+cz}{b^2+c^2} = \frac{cz+ax}{c^2+a^2} = \frac{ax+by}{a^2+b^2}$ then prove that $\frac{x}{a} = \frac{y}{b} = \frac{z}{c}$.

Q.4 Solve the following questions. (Any one) **(4)**

1) If a, b, c are in continued proportion, then prove that

$\frac{a}{a+2b} = \frac{a-2b}{a-4c}$

2) If a : b = 2 : 1 and b : c = 4 : 1 then find the value of $\left(\frac{a^4}{32b^2c^2}\right)^3$.

Q.5 Solve the following questions. (Any one) **(3)**

1) If a, b, c are in continued proportion then show that $\frac{a}{c} = \frac{a^2+ab+b^2}{b^2+bc+c^2}$.

2) If x, y, z are in continued proportion, prove that : $\frac{(x+y)^2}{(y+z)^2} = \frac{x}{z}$