Grade 9 Mathematics Worksheet

Ratio and rate

Questions:

1. Marissa is in a class where the number of learners is one and a half times that of John's class. In John's class, there are 12 boys, and the ratio of boys to girls is 3 to 4. Marissa's class has 18 girls.

    a)   How many girls are there in John's class?

    b)   How many learners are there in Marissa's class?

    c)   What is the ratio of boys to girls in Marissa's class?

    d)   If there are 2 boys absent in John's class, and 6 girls absent in Marissa's class, what will be the ratio of boys to girls in the two classes combined for the day?

2. In a crowd of people there are $\frac{1}{3}$ wearing black, $\frac{1}{6}$ are wearing red and $\frac{1}{2}$ are wearing white. What is the ratio of white to black to red?

Solution

1. a) $M : J = 3 : 2$

   $$\therefore \frac{M}{J} = \frac{3}{2}$$

   $\therefore M = \frac{3}{2} J$

   John: 12 boys and $boys : girls = 3 : 4 \ \rightarrow boys = \frac{3}{4} girls$

   Girls in John's class = $\frac{4}{3} boys = \frac{4}{3} \times 12 = 16$

   b)   Marissa's class has $\frac{3}{2}(16 + 12) = 42$

   c) $boys : girls = 42 - 18 : 18$

   $\therefore boys : girls = 24 : 18 = 4 : 3$

   d)   Boys = 10 + 24 = 34 and girls = 12 + 16 = 28

   So Boys : Girls = 34 : 28 = 17 : 14

2.   White : Black : Red = $\frac{1}{2} : \frac{1}{3} : \frac{1}{6} = 3 : 2 : 1$