Provincial Education Department- Sabaragamuwa – week school

Subject :- Mathematics

Week- 3

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Grade 10

3. **Fractions**

Types of Fractions :-

1. Proper Fractions :- Fractions which are numerator less than denominator

    Ex :- $\frac{2}{3}$, $\frac{3}{4}$, $\frac{4}{5}$ ....

2. Unit Fractions :- Fractions which are numerator equal to 1

    Ex :- $\frac{1}{2}$, $\frac{1}{3}$, $\frac{1}{4}$ ....

3. Mixed Fractions :- :- Fractions which are addition of both whole number and proper fraction

    Ex :- $3\frac{1}{2}$, $4\frac{3}{5}$, $6\frac{2}{9}$ ....

4. Improper Fractions :- Fractions which are numerator greater than denominator or equal

    Ex :- $\frac{9}{2}$, $\frac{17}{8}$, $\frac{3}{3}$ ....

❖ Equivalent Fractions :- Fractions which are equal to another fraction.

    Equivalent Fractions can be obtained by multiplying or dividing both numerator and denominator by same whole number

Ex :- (i). $\frac{2}{3} \times \frac{2}{2} = \frac{4}{6}$, (ii) $\frac{2}{3} \times \frac{3}{3} = \frac{6}{9}$, (iii) $\frac{2}{3} \times \frac{6}{6} = \frac{12}{18}$

(i). $\frac{4}{8} \div \frac{2}{2} = \frac{2}{4}$, (ii) $\frac{6}{9} \div \frac{3}{3} = \frac{2}{3}$, (iii) $\frac{21}{49} \div \frac{7}{7} = \frac{3}{7}$,

The order in which the mathematical operations are manipulated when simplifying fractions,

- ❖ B - (Brackets)
- ❖ O - (Of)
- ❖ D - (Division)
- ❖ M - (Multiplication) } Left to Right method
- ❖ A – (Addition)
- ❖ S - (Subtraction) } Left to Right method

Complete the Review exercise of the Grade 10 text book

<u>Applications of fractions</u> :-
Calculate the following quantities

Ex :-   (i). $\dfrac{1}{3}$ of Rs 3000

(ii). $\dfrac{3}{4}$ of $8.4\,\ell$

$$= \overset{2.1}{\cancel{8.4}} \times \dfrac{3}{\cancel{4}_{1}}$$

$$= 6.3\ell$$

$$1000$$

$$= \cancel{3000} \times \dfrac{1}{\cancel{3}_{1}}$$

$$= \text{Rs } 1000.00$$

(iii) The manufacturer sent $\dfrac{3}{5}$ of its products to market last month. $\dfrac{1}{2}$ of the rest could be sold at home and about 50 items were left at home that month.

   i.What was left of the manufactured items after being sent to market?

   ii. Which part of the total product could be sold at home?

   iii.What is the total production for that month?

(i).The fraction of the remaining portion after being sent to market $= 1 - \dfrac{3}{5}$

$$= \dfrac{2}{5}$$

(ii). Fraction of the portion sold at home $= \dfrac{1}{2}$ of remaining portion

$$= \dfrac{1}{2}\,\text{of}\,\dfrac{2}{5}$$

$$= \dfrac{\cancel{2}}{5} \times \dfrac{1}{\cancel{2}}$$

$$= \dfrac{1}{5}$$

(iii) $= \dfrac{1}{5} + \dfrac{3}{5}$

  Fraction of the portion sold that month $= \dfrac{4}{5}$

    Fraction of the remaining $= 1 - \dfrac{4}{5}$

    $\dfrac{1}{5}$ of Total production $= 50$

    $\therefore$ Total production $= 50 \times 5$

                      $= 250$