

Class: 4

Subject : Mathematics

Prepared by : Israt sultana

Date: 15/8/2020

Revision sheet
Solution of fractions

Short question

Solution:

1. **Ans:** Fraction is a number which has a numerator and a denominator.

$$\text{Fraction} = \frac{\text{Numerator}}{\text{Denominator}}$$

2. **Ans:** A fraction in which the numerator is less than the denominator is called a proper fraction (numerator < denominator).

3. **Ans:** A fraction in which the numerator is greater than the denominator (numerator > denominator) or the numerator is equal to the denominator (numerator = denominator) is called an improper fraction.

4. **Ans:** $\frac{6}{8}, \frac{3}{5}, \frac{12}{17}, \frac{15}{19}, \frac{24}{28}$

5. **Ans:** $\frac{5}{5}, \frac{7}{7}, \frac{7}{5}, \frac{10}{7}, \frac{23}{12}$

6. **Fill in the blanks:**

- $\frac{2}{7}$ is a proper fraction.
- $\frac{6}{4}$ is an improper fraction.
- $\frac{a}{b}$ is where “a” is a numerator.
- $\frac{p}{q}$ is where “q” is a denominator.

7. Put the symbols “<”, “>” or “=”

- $\frac{4}{13} < \frac{4}{7}$
- $\frac{3}{5} > \frac{3}{10}$
- $\frac{1}{2} < \frac{3}{2}$
- $\frac{5}{7} > \frac{4}{7}$
- $\frac{7}{9} < 1$
- $\frac{2}{3} = \frac{2}{3}$

8. Do Addition

Solution:

(1)Solution: $\frac{1}{3} + \frac{1}{3}$

$$= \frac{1+1}{3} \quad \left| \text{L.C.M} = 3 \right.$$
$$= \frac{2}{3}$$

Ans: $\frac{2}{3}$

(2) Solution: $\frac{3}{10} + \frac{7}{10}$

$$= \frac{3+7}{10} \quad \left| \text{L.C.M} = 10 \right.$$
$$= \frac{10}{10}$$
$$= 1$$

Ans: 1

(3) Solution: $\frac{1}{4} + \frac{2}{5}$

$$= \frac{5}{20} + \frac{8}{20}$$
$$= \frac{5+8}{20}$$
$$= \frac{13}{20}$$

Ans: $\frac{13}{20}$

Here, L.C.M= 4×5=20

For, 1st fraction, 20 ÷ 4 =5, 1 × 5 = 5

For, 2nd fraction, 20 ÷ 5 = 4, 2 × 4 = 8

(4) Solution: $\frac{3}{8} + \frac{1}{24}$

Here, 8 and 24 common factor 8, $8 \div 8 = 1$ and $24 \div 8 = 3$

Now, L.C.M = $8 \times 1 \times 3 = 24$

$$= \frac{\boxed{9}}{24} + \frac{\boxed{1}}{24}$$

$$= \frac{9+1}{24}$$

$$= \frac{10}{24}$$

$$= \frac{5}{12}$$

Ans: $\frac{5}{12}$

For 1st fraction, $24 \div 8 = 3, 3 \times 3 = 9$

For 2nd fraction, $24 \div 24 = 1, 1 \times 1 = 1$

Here, 2 is a common factor of both 10 and 24

$$= \frac{10 \div 2}{24 \div 2} = \frac{5}{12}$$

(5) Solution: $\frac{2}{5} + \frac{3}{7}$

L.C.M of 5 and 7 is 35.

For 1st fraction, $35 \div 5 = 7, 2 \times 7 = 14$

For 2nd fraction, $35 \div 7 = 5, 3 \times 5 = 15$

$$= \frac{\boxed{14}}{35} + \frac{\boxed{15}}{35}$$

$$= \frac{14+15}{35}$$

$$= \frac{29}{35}$$

Ans: $\frac{29}{35}$

(6) Solution: $\frac{1}{6} + \frac{2}{15}$

L.C.M of 6 and 15 is 30.

For 1st fraction, $30 \div 6 = 5, 1 \times 5 = 5$

For 2nd fraction, $30 \div 15 = 2, 2 \times 2 = 4$

$$= \frac{\boxed{5}}{30} + \frac{\boxed{4}}{30}$$

$$= \frac{5+4}{30}$$

$$= \frac{9}{30}$$

$$= \frac{3}{10}$$

Ans: $\frac{3}{10}$

9. **Do subtraction**

Solution

(1) **Solution:** $\frac{2}{3} - \frac{1}{3}$

$$= \frac{2-1}{3} \quad | \quad L.C.M. = 3$$

$$= \frac{1}{3}$$

Ans: $\frac{1}{3}$

(2) **Solution:** $\frac{7}{9} - \frac{5}{9}$

$$= \frac{7-5}{9} \quad | \quad L.C.M = 9$$

$$= \frac{2}{9}$$

Ans: $\frac{2}{9}$

(3) **Solution:** $1 - \frac{2}{3}$

$$= \frac{3-2}{3} \quad | \quad L.C.M = 3$$

$$= \frac{1}{3}$$

Ans: $\frac{1}{3}$

4) **Solution:** $\frac{3}{8} - \frac{1}{4}$

Here, 8 and 4 common factor 4, $8 \div 4 = 2$ and $4 \div 4 = 1$

Now, L.C.M = $2 \times 4 \times 1 = 8$

$$= \frac{\textcircled{3}}{8} - \frac{\boxed{2}}{8}$$

$$= \frac{3-2}{8}$$

$$= \frac{1}{8}$$

Ans: $\frac{1}{8}$

For 1st fraction, $8 \div 8 = 1, 1 \times 3 = \textcircled{3}$
 For 2nd fraction, $8 \div 4 = 2, 2 \times 1 = \boxed{2}$

(5) Solution: $\frac{1}{3} - \frac{1}{6}$

L.C.M of 3 and 6 is 6.

For 1st fraction, $6 \div 3 = 2, 1 \times 2 = 2$

For 2nd fraction, $6 \div 6 = 1, 1 \times 1 = 1$

$$= \frac{2}{6} - \frac{1}{6}$$

$$= \frac{2-1}{6}$$

$$= \frac{1}{6}$$

Ans: $\frac{1}{6}$

(6) Solution: $\frac{7}{12} - \frac{1}{4}$

L.C.M of 12 and 4 is 12.

For 1st fraction, $12 \div 12 = 1, 1 \times 7 = 7$

For 2nd fraction, $12 \div 4 = 3, 3 \times 1 = 3$

$$= \frac{7}{12} - \frac{3}{12}$$

$$= \frac{7-3}{12}$$

$$= \frac{4}{12} = \frac{1}{3}$$

$$= \frac{1}{3}$$

Ans: $\frac{1}{3}$

10. Do Calculation

(1) Solution: $\frac{1}{6} + \frac{1}{3} + \frac{1}{4}$

L.C.M of 6, 3 and 4 is 12.

For 1st fraction, $12 \div 6 = 2, 2 \times 1 = 2$

For 2nd fraction, $12 \div 3 = 4, 4 \times 1 = 4$

For 3rd fraction, $12 \div 4 = 3, 3 \times 1 = 3$

$$= \frac{2}{12} + \frac{4}{12} + \frac{3}{12}$$

$$= \frac{2+3+4}{12}$$

$$= \frac{9}{12}$$

Here, 3 is common factor of both 9 and 12

$$= \frac{9 \div 3}{12 \div 3} = \frac{3}{4}$$

$$= \frac{3}{4}$$

Ans: $\frac{3}{4}$

(2) Solution: $\frac{1}{6} + \frac{1}{3} + \frac{2}{9}$ | L.C.M of 6, 3 and 9 is 18.

$$= \frac{3}{18} + \frac{6}{18} + \frac{4}{18}$$

$$= \frac{3+6+4}{18}$$

$$= \frac{13}{18}$$

Ans: $\frac{13}{18}$

(3) Solution: $\frac{1}{2} - \frac{1}{3} - \frac{1}{9}$ | L.C.M of 2, 3 and 9 is 18

$$\begin{aligned}
&= \frac{9}{18} - \frac{6}{18} - \frac{2}{18} \\
&= \frac{9-6-2}{18} \\
&= \frac{9-8}{18} \\
&= \frac{1}{18}
\end{aligned}$$

Ans: $\frac{1}{18}$

11. Make three equivalent fractions freely

(1) solution:

$$\frac{2 \times 2}{5 \times 2} = \frac{4}{10}$$

$$\frac{2 \times 3}{5 \times 3} = \frac{6}{15}$$

$$\frac{2 \times 4}{5 \times 4} = \frac{8}{20}$$

Ans: $\frac{2}{5} = \frac{4}{10} = \frac{6}{15} = \frac{8}{20}$

(2) solution:

$$\frac{2 \times 2}{3 \times 2} = \frac{4}{6}$$

$$\frac{2 \times 3}{3 \times 3} = \frac{6}{9}$$

$$\frac{2 \times 4}{3 \times 4} = \frac{8}{12}$$

Ans: $\frac{2}{3} = \frac{4}{6} = \frac{6}{9} = \frac{8}{12}$

(3) solution:

$$\frac{1 \times 2}{3 \times 2} = \frac{2}{6}$$

$$\frac{1 \times 3}{3 \times 3} = \frac{3}{9}$$

$$\frac{1 \times 4}{3 \times 4} = \frac{4}{12}$$

Ans: $\frac{1}{3} = \frac{2}{6} = \frac{3}{9} = \frac{4}{12}$

14. Convert into fractions with common denominators:

(1) Solution: $\left[\frac{1}{3}, \frac{1}{4} \right]$

L.c.m of 3 and 4 is 12 .

For 1st fraction, $12 \div 3 = 4$

$$\frac{1}{3} = \frac{1 \times 4}{3 \times 4} = \frac{4}{12}$$

Again,

For 2nd fraction, $12 \div 4 = 3$

$$\frac{1}{4} = \frac{1 \times 3}{4 \times 3} = \frac{3}{12}$$

Ans: $\left[\frac{1}{3}, \frac{1}{4} \right] \rightarrow \left[\frac{4}{12}, \frac{3}{12} \right]$

(2) Solution: $\left[\frac{2}{3}, \frac{1}{2} \right]$

L.c.m of 3 and 2 is 6.

For 1st fraction, $6 \div 3 = 2$

$$\frac{2}{3} = \frac{2 \times 2}{3 \times 2} = \frac{4}{6}$$

Again,

For 2nd fraction, $6 \div 2 = 3$

$$\frac{1}{2} = \frac{1 \times 3}{2 \times 3} = \frac{3}{6}$$

Ans: $\left[\frac{2}{3}, \frac{1}{2} \right] \rightarrow \left[\frac{4}{6}, \frac{3}{6} \right]$

(3)**Solution:** $\left[\frac{1}{3}, \frac{1}{4}, \frac{1}{2}\right]$

L.c.m of 3,4 and 2 is 12.

For 1st fraction, $12 \div 3 = 4$

$$\frac{1}{3} = \frac{1 \times 4}{3 \times 4} = \frac{4}{12}$$

For 2nd fraction, $12 \div 4 = 3$

$$\frac{1}{4} = \frac{1 \times 3}{4 \times 3} = \frac{3}{12}$$

For 3rd fraction, $12 \div 2 = 6$

$$\frac{1}{2} = \frac{1 \times 6}{2 \times 6} = \frac{6}{12}$$

Ans: $\left[\frac{1}{3}, \frac{1}{4}, \frac{1}{2}\right] \rightarrow \left[\frac{4}{12}, \frac{3}{12}, \frac{6}{12}\right]$

13. Word problem

a. Solution: Mr. Afjal bought,

$$\text{Rice} = \frac{1}{2} \text{ portion}$$

$$\text{Vegetables} = \frac{3}{10} \text{ portion}$$

$$\text{Fruits} = (+) \frac{1}{10} \text{ portion}$$

$$\text{Total} = \frac{9}{10} \text{ portion}$$

Ans: He spent $\frac{9}{10}$ portion in total money.

b.

Solution: Anika got $= \frac{1}{3}$ part of bread

Calculation,

$$\begin{aligned} \frac{1}{2} + \frac{3}{10} + \frac{1}{10} &= \frac{5}{10} + \frac{3}{10} + \frac{1}{10} \\ &= \frac{9}{10} \end{aligned}$$

Calculation,

$$\frac{1}{3} + \frac{4}{3} = \frac{5}{3}$$

$$\text{Ayra got} = (+)\frac{4}{3} \text{ part of bread}$$

$$\text{They got total} = \frac{5}{3} \text{ part of bread}$$

Ans: They got total $\frac{5}{3}$ part of bread.

c.

Solution: Ribbon length is $= \frac{13}{25}$ metre

$$\text{Cutting ribbon length is} = (-)\frac{2}{5} \text{ metre}$$

$$\text{Remaining ribbon length is} = \frac{3}{25} \text{ metre}$$

Ans: Remaining ribbon length is $\frac{3}{25}$ metre.

Calculation,

$$\begin{aligned} \frac{13}{25} - \frac{2}{5} &= \frac{13}{25} - \frac{10}{25} \\ &= \frac{3}{25} \end{aligned}$$

d.

Solution: 1st fraction is $= \frac{5}{9}$

$$\text{2nd fraction is} = (-)\frac{2}{9}$$

$$\text{Difference} = \frac{3}{9} = \frac{1}{3}$$

Ans: Difference $\frac{1}{3}$

Calculation, $\frac{5}{9} - \frac{2}{9} = \frac{3}{9}$

$$= \frac{1}{3}$$

16. Creative questions:

Q 1. Solution:

(1) **Solution:** Sabuj's house is $\frac{3}{8}$ km to the west of the school

Mitu's house is $\frac{5}{12}$ km to the east of the school

∴ The school is from Sabuj's house to Mitu's house = $\left(\frac{3}{8} + \frac{5}{12}\right)$ km

$$\begin{aligned} &= \left(\frac{9}{24} + \frac{10}{24}\right) \text{ km} \\ &= \frac{19}{24} \text{ km} \end{aligned} \quad \left. \begin{array}{l} \text{Here, L.C.M} = 24 \end{array} \right\}$$

Ans: The school is from Sabuj's house to Mitu's house $\frac{19}{24}$ km.

(2) **Solution:** Sabuj's house is $\frac{3}{8}$ km = $\frac{9}{24}$ km

Mitu's house is $\frac{5}{12}$ km = $\frac{10}{24}$ km

Here, $\frac{9}{24} < \frac{10}{24}$

∴ Sobuj's house is nearer to school.

Ans: Sobuj's house is nearer to school.

(3) **Solution:** Difference = $\left(\frac{5}{12} - \frac{3}{8}\right)$ km

$$= \left(\frac{10}{24} - \frac{9}{24}\right) \text{ km}$$

$$= \frac{1}{24} \text{ km}$$

Here, L.c.m=24

Ans: Difference $\frac{1}{24}$ km.

Q 2. Solution:

(1) **Solution:** A farmer planted in a garden,

$$\text{Brinjal} = \frac{1}{2} \text{ part}$$

$$\text{Cabbage} = \frac{1}{4} \text{ part}$$

$$\text{Flowers} = (+) \frac{1}{5} \text{ part}$$

$$\text{He planted all} = \frac{19}{20} \text{ part}$$

$$\begin{aligned} \text{Calculation: A farmer planted all} &= \left(\frac{1}{2} + \frac{1}{4} + \frac{1}{5}\right) \text{ part} \\ &= \left(\frac{10}{20} + \frac{5}{20} + \frac{4}{20}\right) \text{ part} \\ &= \frac{19}{20} \text{ part} \end{aligned}$$

Here, L.C.M.=20

$$\text{Ans: A farmer planted all } \frac{19}{20} \text{ part.}$$

(2) Solution: Let, whole garden is = 1.

$$\text{A farmer planted } \frac{19}{20} \text{ part in his garden.}$$

$$\begin{aligned} \text{The garden remained blank} &= \left(1 - \frac{19}{20}\right) \text{ part} \\ &= \left(\frac{20-19}{20}\right) \text{ part} \\ &= \frac{1}{20} \text{ part} \end{aligned}$$

$$\text{Ans: The garden remained blank } \frac{1}{20} \text{ part.}$$

