

PARAGON CONVENT SCHOOL

SECTOR 24 - B CHANDIGARH

CH – 9 { FRACTIONS }

Activity 6 and Activity 7

Addition and subtraction of like fractions

Q1 Find the sum:

a. $\frac{5}{9} + \frac{3}{9} = \frac{5 + 3}{9} = \frac{8}{9}$

b. $\frac{1}{12} + \frac{7}{12} = \frac{1 + 7}{12} = \frac{8}{12} = \frac{2}{3}$

c. $\frac{13}{19} + \frac{5}{19} = \frac{13 + 5}{19} = \frac{18}{19}$

d. $\frac{3}{17} + \frac{1}{17} = \frac{3 + 1}{17} = \frac{4}{17}$

e. $\frac{5}{14} + \frac{7}{14} + \frac{3}{14} = \frac{5 + 7 + 3}{14} = \frac{15}{14} = 1 \frac{1}{14}$

Q2. Subtract

a. $\frac{3}{11} - \frac{2}{11} = \frac{3 - 2}{11} = \frac{1}{11}$

b. $\frac{16}{31} - \frac{12}{31} = \frac{16 - 12}{31} = \frac{4}{31}$

c. $\frac{17}{12} - \frac{13}{12} = \frac{4}{12} = \frac{1}{3}$

d. $\frac{21}{23} - \frac{10}{23} = \frac{21 - 10}{23} = \frac{11}{23}$

e. $\frac{10}{41} - \frac{7}{41} = \frac{10 - 7}{41} = \frac{3}{41}$

Addition and subtraction of unlike fractions

Q3. Find the sum

a. $\frac{11}{15}$ and $\frac{1}{6}$

multiples of 15 = 15 , 30 , 45 , 60 , 75

multiples of 6 = 6 , 12 , 18 , 24 , 30 , 36

LCM = 30

$$\frac{11}{15} \times \frac{2}{2} = \frac{22}{30}$$

$$\frac{1}{6} \times \frac{5}{5} = \frac{5}{30}$$

$$\frac{22}{30} + \frac{5}{30} = \frac{22 + 5}{30} = \frac{27}{30}$$

b. $\frac{3}{10} + \frac{4}{15}$

multiples of 10 = 10 , 20 , 30 , 40 , 50 ,

multiples of 15 = 15 , 30 , 45 , 60 , 75

LCM = 30

$$\frac{3}{10} \times \frac{3}{3} = \frac{9}{30}$$

$$\frac{4}{15} \times \frac{2}{2} = \frac{8}{30}$$

$$\frac{9}{30} + \frac{8}{30} = \frac{17}{30}$$

$$c. \frac{2}{7} + \frac{3}{4} + \frac{1}{28}$$

multiples of 7 : 7 , 14 , 21 , **28** , 35

multiples of 4 : 4 , 8 , 12 , 16 , 20 , 24 , **28**

multiples of 28 : **28** , 56 , 84

LCM : 28

$$\frac{2}{7} \times \frac{4}{4} = \frac{8}{28}$$

$$\frac{3}{4} \times \frac{7}{7} = \frac{21}{28}$$

$$\frac{1}{28} \times \frac{1}{1} = \frac{1}{28}$$

$$\frac{8}{28} + \frac{21}{28} + \frac{1}{28} = \frac{8 + 21 + 1}{28} = \frac{30}{28} = \frac{15}{14} = 1 \frac{1}{14}$$

$$d. \frac{2}{7} + \frac{5}{21} + \frac{2}{6}$$

multiples of 7 : 7 , 14 , 21 , 28 , 35 , **42**

multiples of 21 : 21 , **42** , 63 , 84 , 105

multiples of 6 : 6 , 12 , 18 , 24 , 30 , 36 , **42**

LCM = 42

$$\frac{2}{7} \times \frac{6}{6} = \frac{12}{42}$$

$$\frac{5}{21} \times \frac{2}{2} = \frac{10}{42}$$

$$\frac{2}{6} \times \frac{7}{7} = \frac{14}{42}$$

$$\frac{12}{42} + \frac{10}{42} + \frac{14}{42} = \frac{12 + 10 + 14}{42} = \frac{36}{42} = \frac{6}{7}$$

Q4 Subtract

$$\text{a. } \frac{3}{14} - \frac{1}{7}$$

multiples of 14 : 14 , 28 , 42 , 60

multiples of 7 : 7 , 14 , 21 , 28 , 35

LCM = 14

$$\frac{3}{14} \times \frac{1}{1} = \frac{3}{14}$$

$$\frac{1}{7} \times \frac{2}{2} = \frac{2}{14}$$

$$\frac{3}{14} - \frac{2}{14} = \frac{1}{14}$$

$$\text{b. } \frac{1}{6} - \frac{1}{8}$$

multiples of 6 = 6 , 12 , 18 , 24 , 30 , 36 , 42

multiples of 8 = 8 , 16 , 24 , 32 , 40 , 48

LCM = 24

$$\frac{1}{6} \times \frac{4}{4} = \frac{4}{24}$$

$$\frac{1}{8} \times \frac{3}{3} = \frac{3}{24}$$

$$\frac{4}{24} - \frac{3}{24} = \frac{1}{24}$$

$$\text{c. } \frac{6}{7} - \frac{5}{6}$$

multiples of 7 : 7 , 14 , 21 , 28 , 35 , 42 , 49

multiples of 6 = 6 , 12 , 18 , 24 , 30 , 36 , 42

$$\text{LCM} = 42$$

$$\frac{6}{7} \times \frac{6}{6} = \frac{36}{42}$$

$$\frac{5}{6} \times \frac{7}{7} = \frac{35}{42}$$

$$\frac{36}{42} - \frac{35}{42} = \frac{1}{42}$$

ACTIVITY – 8

MULTIPLY :

1. $3 \times \frac{3}{4} = \frac{9}{4} = 2\frac{1}{4}$

2. $\frac{2}{3} \times 7 = \frac{14}{3} = 4\frac{2}{3}$

3. $3 \times \frac{4}{5} = \frac{12}{5} = 2\frac{2}{5}$

4. $5 \times \frac{8}{9} = \frac{40}{9} = 4\frac{4}{9}$

5. $8 \times \frac{7}{11} = \frac{56}{11} = 5\frac{1}{11}$

6. $10 \times \frac{4}{9} = \frac{40}{9} = 4\frac{4}{9}$

7. $\frac{7}{13} \times 26 = 14$

8. $15 \times \frac{8}{9} = 5 \quad 15 \times \frac{8}{9 \cancel{3}} = \frac{40}{3} = 13\frac{1}{3}$

ACTIVITY - 9

$$\text{Sol 1 Money spent on food} = \frac{1}{3}$$

$$\text{Money spent on books} = \frac{1}{4}$$

$$\text{Total money spent} = \frac{1}{3} + \frac{1}{4}$$

$$\text{LCM} = 12$$

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

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

$$\frac{4}{12} + \frac{3}{12} = \frac{4+3}{12} = \frac{7}{12}$$

$$\text{Sol 2 Ribbon bought by Manu} = \frac{2}{5}$$

$$\text{Ribbon bought by Sonal} = \frac{1}{2}$$

$$\frac{2}{5} \begin{array}{l} \swarrow \searrow \\ \nearrow \nwarrow \end{array} \frac{1}{2} \quad (\text{by cross multiplication})$$

$$4 < 5$$

Sonal bought more ribbon

$$\frac{1}{2} - \frac{2}{5} \quad \text{LCM} = 10$$

$$\frac{1}{2} \times \frac{5}{5} = \frac{5}{10}$$

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

$$\frac{5}{10} - \frac{4}{10} = \frac{5-4}{10} = \frac{1}{10}$$

$$\text{Sol 3. Time spent to complete math homework} = \frac{1}{6}$$

$$\text{Time spent to complete science homework} = \frac{3}{10}$$

$$\text{Total time spent} = \frac{1}{6} + \frac{3}{10}$$

$$\text{LCM} = 30$$

$$\frac{1}{6} \times \frac{5}{5} = \frac{5}{30}$$

$$\frac{3}{10} \times \frac{3}{3} = \frac{9}{30}$$

$$\frac{5}{30} + \frac{9}{30} = \frac{14}{30} = \frac{7}{15}$$

$$\text{Sol. 4. Weight of 1 packet} = \frac{3}{5} \text{ kg}$$

$$\text{Weight of 10 packets} = \frac{3}{5} \times 10 = 6 \text{ kg}$$