SELECTION
6 MATHS
TERM - III
5 in 1

CHAPTER 1. FRACTIONS

Exercise 1.1

1. Fill in the blanks

i) $7\frac{3}{4} + 6\frac{1}{2} =$ _____

Solution :

$$7\frac{3}{4} + 6\frac{1}{2} = 7+6+\left(\frac{3}{4}+\frac{1}{2}\right)$$

$$= 13+\left(\frac{3}{4}+\frac{2}{4}\right) = 13+\frac{5}{4} = 13+1+\frac{1}{4} = 14+\frac{1}{4}$$

$$= 14\frac{1}{4} \qquad \textbf{Ans :}\ 14\frac{1}{4}$$

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ii) The sum of a whole number and a proper fraction is called _____

Ans : Mixed Fraction

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iii) $5\frac{1}{3} - 3\frac{1}{2} =$ _____

$$\begin{array}{r|l} & 1 - Q \\ 6 & 11 \\ & 6 \\ \hline & 5 - R \end{array}$$

Solution :

Since $5 > 3$ and $\frac{1}{3} < \frac{1}{2}$

$$5\frac{1}{3} = \frac{(5\times3)+1}{3} = \frac{16}{3} \text{ and } 3\frac{1}{2} = \frac{(3\times2)+1}{2} = \frac{7}{2}$$

Consider $\frac{16}{3}$ and $\frac{7}{2}$, LCM of 3 and 2 = 6

$$\frac{16}{3} - \frac{7}{2} = \frac{32}{6} - \frac{21}{6} = \frac{11}{6} = 1\frac{5}{6} \qquad \textbf{Ans :}\ 1\frac{5}{6}$$

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iv) $8 \div \frac{1}{2} =$ _____

Solution: $8 \frac{1}{2} \div = 8 \times \frac{2}{1} = 16$ (Reciprocal of $\frac{1}{2}$ is $\frac{2}{1}$)

Ans :16

v) The number which has its own reciprocal is _____

Ans : 1

2. Say True or False

i) $3 \frac{1}{2}$ Can be written as $3+\frac{1}{2}$ **Ans : True**

ii) The sum of any two proper fractions is always an improper fraction.

Solution :

Let us consider two improper fraction be $\frac{1}{2}$ and $\frac{1}{3}$

$\frac{1}{2} + \frac{1}{3} = \frac{3+2}{6} = \frac{5}{6}$ (Proper fraction) _____ (1)

consider two proper fraction $\frac{4}{5}$ and $\frac{6}{10}$

$\frac{4}{5} + \frac{6}{10} = \frac{8+6}{10} = \frac{14}{10}$ (improper fraction) _____ (2)

From (1) and (2) sum of any two proper fractions will be either proper fraction (or) improper fraction

Ans : False

iii) The mixed fraction of $\frac{13}{4}$ **is** $3 \frac{1}{4}$

Solution : $\frac{13}{4} = 3 + \frac{1}{4} = 3 \frac{1}{4}$

$$4 \overline{)13} \quad 3-Q$$
$$12$$
$$1-R$$

Ans : True

iv)The reciprocal of an improper fraction is always a proper fraction.

Solution : Let $\frac{7}{4}$ as improper fraction

Reciprocal of $\frac{7}{4}$ is $= \frac{4}{7}$ (proper fraction)

Hence, Reciprocal of an improper fraction is always a proper fraction. **Ans : True**

v) $3\frac{1}{4} \times 3\frac{1}{4} = 9\frac{1}{16}$

Solution : $3\frac{1}{4} \times 3\frac{1}{4} = \frac{13}{4} \times \frac{13}{4} = \frac{169}{16} = 10\frac{9}{16}$

$$16\overline{)169}\ 10\text{ -Q}$$
$$16$$
$$09\text{ - R}$$

Ans : False

3. Answer the following :

(i) Find the sum of $\frac{1}{7}$ and $\frac{3}{9}$

Solution : $\frac{1}{7} + \frac{3}{9} = \frac{(1 \times 9) + (3 \times 7)}{7 \times 9}$

$= \frac{9 + 21}{63} = \frac{30}{63} = \frac{10 \times \cancel{3}}{21 \times \cancel{3}} = \frac{10}{21}$ **Ans : $\frac{10}{21}$**

(ii) What is the total of $3\frac{1}{3}$ and $4\frac{1}{6}$?

Solution: $3\frac{1}{3} + 4\frac{1}{6} = \frac{(3\times3)+1}{3} + \frac{(4\times6)+1}{6} = \frac{10}{3} + \frac{25}{6}$

$$2\overline{)15}\ 7\text{ -Q}$$
$$14$$
$$1\text{ - R}$$

$= \frac{20}{6} + \frac{25}{6} = \frac{20+25}{6} = \frac{45}{6} = \frac{15}{2} = 7 + \frac{1}{2} = 7\frac{1}{2}$ **Ans : $7\frac{1}{2}$**

(OR)

$3\frac{1}{3} + 4\frac{1}{6} = 3 + 4 + \left(\frac{1}{3} + \frac{1}{6}\right) = 7 + \left(\frac{2}{6} + \frac{1}{6}\right)$

$= 7 + \frac{3}{6} = 7 + \frac{1}{2} = 7\frac{1}{2}$

Ans : $7\frac{1}{2}$

(iii) Simplify :

$$1\frac{3}{5} + 5\frac{4}{7}$$

Solution : $1\frac{3}{5} + 5\frac{4}{7} = 1 + 5 + \left(\frac{3}{5} + \frac{4}{7}\right)$

$$= 6 + \left(\frac{(3x7) + (5x4)}{5 \times 7}\right) = 6 + \left(\frac{21 + 20}{35}\right)$$

$$= 6 + \frac{41}{35} = 6 + 1 + \frac{6}{35} = 7 + \frac{6}{35} = 7\frac{6}{35}$$

Ans : $7\frac{6}{35}$

$$35\overline{)41}\ 1\text{ - Q}$$
$$35$$
$$6\text{ - R}$$

(iv) Find the difference between $\frac{8}{9}$ and $\frac{2}{7}$

Solution : $\frac{8}{9} - \frac{2}{7} = \frac{(7 \times 8) - (9 \times 2)}{(9 \times 7)}$

$$= \frac{56 - 18}{63} = \frac{38}{63}$$

Ans : $\frac{38}{63}$

(v) Subtract $1\frac{3}{5}$ from $2\frac{1}{3}$

Solution : $2 > 1$ and $\frac{1}{3} < \frac{3}{5}$

So, $2\frac{1}{3} = \frac{(2 \times 3) + 1}{3} = \frac{7}{3}$ and

$$1\frac{3}{5} = \frac{(1 \times 5) + 3}{5} = \frac{8}{5}$$

LCM of 3 and 5 is 15

$$\frac{7}{3} - \frac{8}{5} = \frac{7 \times 5}{15} - \frac{8 \times 3}{15}$$

$$= \frac{35}{15} - \frac{24}{15} = \frac{11}{15}$$

Ansl : $\frac{11}{15}$
