6.9.21

Ex-9-B

3 simplify

a. $\frac{7}{12} + \frac{9}{12} - \frac{5}{12} = \frac{11}{12}$

LCM

$\frac{(7+9)-5}{12} = \frac{11}{12}$

b. $\frac{9}{10} - \frac{3}{5} + \frac{7}{8} = \frac{9}{10} + \frac{7}{8} - \frac{3}{5}$

LCM = 40

$\frac{9\times4 + 7\times5 - 3\times8}{40}$

$= \frac{36+35-24}{40} = \frac{71-24}{40} = \frac{47}{40}$

$1\frac{7}{40}$

c) $\frac{5}{12} - \frac{2}{3} - \frac{1}{2} + \frac{7}{1}$

$= \frac{5}{12} + \frac{7}{1} - \frac{2}{3} - \frac{1}{2}$

[LCM = 12]

$= \frac{5 + (7 \times 12) - (2 \times 4) - (1 \times 6)}{12}$

$= \frac{5 + 84 - 8 - 6}{12}$

$= \frac{89 - 14}{12} = \frac{75}{12_4} = 6\frac{3}{12} = 6\frac{1}{4}$ (25)

d) $\frac{1}{2} + \frac{3}{4} - \frac{5}{8} - \frac{1}{16}$

LCM = 16

$\frac{8 + (3 \times 4) - (5 \times 2) - 1}{16}$

$\frac{8 + 12 - 10 - 1}{16} = \frac{9}{16}$ ~~$8 + 20 - 10 - 1 = 9$~~

e) $8\frac{3}{4} + 7\frac{1}{2} - 3\frac{1}{4} - 2\frac{1}{2} =$

ans $\frac{35}{4} + \frac{15}{2} - \frac{13}{4} - \frac{5}{2} =$

LCM = 4

$\frac{35+30+13-10}{4} = \frac{65-23}{4}$

$\frac{42}{4} \quad \frac{21}{2} = 10\frac{2}{4}$

f) $10\frac{5}{6} - 7\frac{2}{3} + 8\frac{1}{3} - 5\frac{1}{2}$

ans $= \frac{65}{6} + \frac{25}{3} - \frac{23}{3} - \frac{11}{2}$ = LCM = 6

$\frac{65+25-23-11}{6} = \frac{90-34}{6} = 56$

$= \frac{(65+50)-(46-33)}{6}$

$= \frac{115-79}{6} = \frac{36}{6}$ or $\frac{6}{1}$

g) $5\frac{5}{12} - \frac{6}{1} + \frac{8}{1} - 5\frac{3}{5}$

ans $= \frac{65}{12} + \frac{8}{1} - \frac{6}{1} - \frac{28}{5}$ = LCM = 60

$\frac{325+480-360-336}{60}$ $\frac{805-696}{60} = \frac{109}{60}$

or $1\frac{49}{60}$

h) $10\frac{1}{4} + 6\frac{3}{8} - \frac{15}{1} + 1\frac{1}{2}$

$\frac{41}{4} + \frac{51}{8} + \frac{3}{2} - \frac{15}{1}$ = LCM = 8

$\frac{82+51+12-120}{8} = \frac{145-120}{8} = \frac{25}{8}$

or

$3\frac{1}{8}$

i) $\frac{25}{1} - 20\frac{1}{2} + 15\frac{3}{5} - \frac{5}{1}$

$\frac{25}{1} + \frac{78}{5} - \frac{41}{2} - \frac{5}{1}$ LCM = 10

$\frac{250+156-205-50}{10} = \frac{406-255}{10} = \frac{151}{10}$ or $15\frac{1}{10}$

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j) $\frac{9}{14} - 1\frac{3}{7} + 4\frac{3}{7} - 1\frac{8}{21}$

$\frac{9}{14} + \frac{31}{7} - \frac{9}{7} - \frac{33}{21}$ LCM = 42

$\frac{27 + 186 - 54 - 46}{42} = \frac{313 - 100}{42} = \frac{113}{42}$

or

$2\frac{29}{42}$

Multiplication of fractions

Multiply the numerators → $\frac{2}{5} \times \frac{3}{4} = \frac{6}{}$

Multiply the Denominators → $\frac{2 \times 3}{5 \times 4} = \frac{6}{20}$

Reduce the fractions if necessary → $\frac{6}{20} = \frac{3}{10}$