Ex-12 CB

(1) $8\frac{3}{5} - (6\frac{1}{2} - 4\frac{1}{4} - 3\frac{1}{4})$

$= 8\frac{43}{5} - (\frac{13}{2} - \frac{17}{4} - \frac{15}{4})$

$= 8\frac{43}{5} - (\frac{13}{2} - \frac{2}{1})$

$= \frac{43}{5} - (\frac{13}{2} - \frac{2}{1})$

$= \frac{43}{5} - \frac{11}{2}$

$= \frac{43}{5} - \frac{6}{1}$

$= \frac{43 \times 2 - 6 \times 30}{30}$

$= \frac{258 - 180}{30}$

$= \frac{78}{30} = \frac{39}{15} = 2\frac{9}{15}$

(2) $17\frac{1}{3} \div \{6\frac{2}{11} - (4 - 2\frac{3}{11} - 1)\}$

$$\frac{52}{3} \div \left\{\frac{68}{11} - \left(4 - \frac{25}{11} - \frac{7}{11}\right)\right\}$$

$$= \frac{52}{3} \div \left\{\frac{68}{11} - \left(4 - \frac{25 - 7}{11}\right)\right\}$$

$$= \frac{52}{3} \div \left\{\frac{68}{11} - \left(4 - \frac{25 \times 1 - 7 \times 11}{11}\right)\right\}$$

$$= \frac{52}{3} - \left\{\frac{68}{11} - \left(4 - \frac{25 - 11}{11}\right)\right\}$$

$$= \frac{52}{3} - \left\{\frac{68}{11} - \left(4 - \frac{14}{11}\right)\right\}$$

$$= \frac{52}{3} - \left\{\frac{68}{11} - \left(\frac{4}{1} - \frac{14}{11}\right)\right\}$$

$$= \frac{52}{3} - \left\{\frac{68}{11} - \left(\frac{4 \times 11 - 14}{11}\right)\right\}$$

$$= \frac{52}{3} - \left\{\frac{68}{11} - \left(\frac{44 - 14}{11}\right)\right\}$$

$$= \frac{52}{3} - \left\{\frac{68}{11} - \frac{30}{11}\right\}$$

$$= \frac{52}{3} - \left\{\frac{68 \times 11 - 30 \times 1}{11}\right\}$$

$$= \frac{52}{3} - \left\{\frac{748 - 30}{11}\right\}$$

$$= \frac{52}{3} - \frac{718}{11}$$

$$= \frac{52 \times 11 - 718 \times 1}{33} = \frac{572 - 718}{33} = \frac{-146}{33} = -4\frac{14}{33}$$

$= \frac{254}{33} = \frac{118}{11} = 10\frac{8}{11}$

(8) $3.2 \div [1.8 + \{3 \div 1.5 + 0.1 - 0.4\}]$

$= 3.2 \div [1.8 + \{3 \div 1.5 + 0.2\}]$

$= 3.2 \div [1.8 + \{2 + 0.2\}]$

$= 3.2 \div [1.8 + 2.2]$

$= 3.2 \div 4.0$

$= 1.8$

$3.2 \div [1.8 + \{0.5 + 0.2\}]$

$= 3.2 \div [1.8 + \{0.5 + 0.2\}]$

$= 3.2 \div [1.8 + 0.7]$

$= 3.2 \div 2.5$

$= 3.2 \div 2.5$

(3) $3.2 \div \{1.8 + (3 \div 1.5 + 0.6 - 0.4)\}$

$= 3.2 \div \{1.8 + (3 \div 1.5 + 0.6 - 0.4)\}$

$= 3.2 \div \{1.8 + (3 \div 1.5 + 0.2)\}$

$= 3.2 \div \{1.8 + (3 \div 1.5 + 0.2)\}$

$= 3.2 \div \{1.8 + (2.0 + 0.2)\}$

$= 3.2 \div \{1.8 + 2.2\}$

$= 3.2 \div 4.0$

$= 0.8$

(4) $8\frac{2}{4} + [4\frac{1}{2} + \{8\frac{1}{8} - (3\frac{2}{2} + (\frac{3}{4} - 5\frac{2}{2}))\}]$

$= \frac{33}{4} + [\frac{9}{2} + \{\frac{25}{3} - (\frac{7}{2} + \frac{11}{2})\}]$

$= \frac{33}{4} + [\frac{9}{2} + \{\frac{25}{3} - (\frac{7}{2} + \frac{11}{2})\}]$

$= \frac{33}{4} + [\frac{9}{2} + \{\frac{25}{3} - (\frac{7}{2} + \frac{15}{11})\}]$

$= \frac{33}{4} + [\frac{9}{2} + \{\frac{25}{3} - \frac{47}{22}\}]$

$= \frac{33}{4} + \left[\frac{9}{2} + \frac{137}{22} \right]$

$= \frac{33}{4} + \frac{725}{4} = \frac{835}{44} = 18\frac{43}{44}$

(5) $5\frac{3}{8} - \left[3\frac{3}{5} - \left\{ 2\frac{3}{8} - \left(\frac{3}{4} - \overline{\frac{1}{2} - \frac{2}{4}} \right) \right\} \right]$

$= \frac{43}{8} - \left[\frac{18}{5} - \left\{ \frac{11}{8} - \left(\frac{3}{4} - \overline{\frac{1}{2} - \frac{2}{4}} \right) \right\} \right]$

$= \frac{43}{8} - \left[\frac{18}{5} - \left\{ \frac{11}{8} - \left(\frac{3}{4} - \frac{2}{4} \right) \right\} \right]$

$= \frac{43}{8} - \left[\frac{18}{5} - \left\{ \frac{11}{8} - \frac{2}{4} \right\} \right]$

$= \frac{43}{8} - \left[1\frac{18}{5} - \frac{3}{8} \right]$

$= \frac{43}{8} - \frac{31}{40} = \frac{91}{40} = 2\frac{11}{40}$

(6) $4 - \left[5\frac{1}{2} - \left\{ 2\frac{3}{2} + \left(1 + \frac{7}{2} + 1\frac{7}{4} - \frac{1}{12} \right) \right\} \right]$

$4 - \left[\frac{11}{2} - \left\{ \frac{5}{2} + \left(1 + \frac{7}{2} + \frac{5}{4} - \frac{7}{12} \right) \right\} \right]$

$= 4 - \left[\frac{11}{2} - \left(\frac{5}{2} + \left(\frac{24}{24} + \frac{4}{24} + \frac{30}{24} - \frac{1}{2} \right) \right) \right]$

$= 4 - \left[\frac{11}{2} - \left\{ \frac{5}{2} + \left(2\frac{9}{12} - \frac{1}{2} \right) \right\} \right]$

$4 - \left[\frac{11}{2} - \left\{ \frac{5}{2} + 2\frac{3}{12} \right\} \right]$

(c) $4 - \left[\frac{22}{12} - \frac{53}{12}\right]$

$= 4 - \frac{13}{12}$

$= \frac{4}{1} - \frac{13}{12} = \frac{35}{12} = 2\frac{11}{12}$

(d) $7.2 + [0.2 \text{ of } 10 - \{0.6 \div 0.3 - 0.8 - 0.6\}]$

$= 7.2 + [0.2 \text{ of } 10 - \{0.6 \div 0.3 - 0.8 - 0.6\}]$

$= 7.2 + [0.2 \text{ of } 10 - \{0.6 \div 0.3 - 0.2\}]$

$= 7.2 + [0.2 \text{ of } 10 - \{2 - 0.2\}]$

$= 7.2 + [2 - 1.8]$

$= 7.2 + 0.2$

$= 7.4$

(e) $16 \div [0.1 + \{0.1 + (0.1 + 0.2 - 0.1)\}]$

$= 16 \div [0.1 + \{0.1 + (0.1 + 0.1)\}]$

$= 16 \div [0.1 + \{0.1 + 0.2\}]$

$= 16 \div [0.1 + 0.3]$

$= 16 \div 0.4$

$= 40$

(9) $8.8 \div [0.5 \text{ of } 15 - \{6.2 \div 2 - (8.4 - 7.6)\}]$

$= 8.8 \div [0.5 \text{ of } 15 - \{6.2 \div 2 - 0.8\}]$

$= 8.8 \div [0.5 \text{ of } 15 - \{3.1 - 0.2\}]$

$= 8.8 \div [0.5 \text{ of } 15 - 2.9]$

$= 8.8 \div [7.5 - 2.9]$

$= 8.8 \div 5.2$

$= 1\frac{9}{13}$

(10).

(ii) $0.4 \div [1.5 \div \{0.6 \div (0.3 - 0.3 - 1)\}]$

$= 0.4 \div [1.5 \div \{0.6 \div (0.3 - 0.2)\}]$

$= 0.4 \div [1.5 \div \{0.6 \div 0.1\}]$

$= 0.4 \div [1.5 \div 6]$

$= 0.4 \div 0.25$

$= 1.6$