

Ex - 24

$$1. \left(\frac{4}{9} + \frac{7}{9}\right) \times 2\frac{1}{4}$$

$$= \frac{11}{9} \times \frac{9}{4} = \frac{11}{4} = 2\frac{3}{4}$$

$$2. \frac{3}{8} \div \left(1\frac{7}{8} - \frac{3}{4}\right)$$

$$= \frac{3}{8} \div \left(\frac{15}{8} - \frac{3}{4}\right)$$

$$= \frac{3}{8} \div \left(\frac{15-6}{8}\right)$$

$$= \frac{3}{8} \div \frac{9}{8}$$

$$= \frac{3}{8} \times \frac{8}{9} = \frac{1}{3}$$

$$3. 6 + \left\{1 + \frac{1}{2} + \left(\frac{3}{4} - \frac{1}{2}\right)\right\}$$

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

$$= 6 + \left\{1 + \frac{1}{2} + \frac{1}{4}\right\}$$

$$= 6 + \left\{\frac{4+2+1}{4}\right\}$$

$$= 6 + \frac{7}{4}$$

$$= \frac{24+7}{4} = \frac{31}{4}$$

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

$$4. \left\{\left(13\frac{1}{3} - 12\frac{1}{2}\right) \div \frac{5}{6}\right\} \text{ of } \frac{3}{8}$$

$$= \left\{\left(\frac{40}{3} - \frac{25}{2}\right) \div \frac{5}{6}\right\} \text{ of } \frac{3}{8}$$

$$= \left\{\left(\frac{80-45}{6}\right) \div \frac{5}{6}\right\} \text{ of } \frac{3}{8}$$

$$= \left\{1\frac{35}{6} \times \frac{6}{5}\right\} \text{ of } \frac{3}{8}$$

$$= 7 \text{ of } \frac{3}{8}$$

$$= \frac{21}{8} = 2\frac{5}{8}$$

$$5. 2\frac{1}{2} - \left\{\frac{13}{4} - \left(3\frac{1}{2} - 1\frac{3}{4}\right)\right\}$$

$$= \frac{5}{2} - \left\{\frac{13}{4} - \left(\frac{7}{2} - \frac{7}{4}\right)\right\}$$

$$= \frac{5}{2} - \left\{\frac{13}{4} - \left(\frac{14-7}{4}\right)\right\}$$

$$= \frac{5}{2} - \left\{\frac{13}{4} - \frac{7}{4}\right\}$$

$$= \frac{5}{2} - \frac{6}{4}$$

$$= \frac{10-6}{4} = \frac{4}{4} = 1$$

$$6. 140 - [4 + \{12 \times (7-5)\}]$$

$$= 140 - [4 + \{12 \times 2\}]$$

$$= 140 - [4 + 24]$$

$$= 140 - 28 = 112$$

$$7. 4\frac{1}{2} - [1 + \{2\frac{1}{2} - (\frac{1}{3} - \frac{1}{4})\}]$$

$$= \frac{9}{2} - [1 + \{ \frac{5}{2} - (\frac{4-3}{12}) \}]$$

$$= \frac{9}{2} - [1 + \{ \frac{5}{2} - \frac{1}{12} \}]$$

$$= \frac{9}{2} - [1 + \{ \frac{30-1}{12} \}]$$

$$= \frac{9}{2} - [1 + \frac{29}{12}]$$

$$= \frac{9}{2} - [\frac{12+29}{12}]$$

$$= \frac{9}{2} - \frac{41}{12}$$

$$= \frac{54-41}{12} = \frac{13}{12} = 1\frac{1}{12}$$

$$\begin{aligned}
8. \quad & 3\frac{1}{12} - \left[1\frac{3}{4} + \left\{ 2\frac{1}{2} - \left(1\frac{1}{2} - \frac{1}{3} \right) \right\} \right] \\
&= \frac{37}{12} - \left[\frac{7}{4} + \left\{ \frac{5}{2} - \left(\frac{3}{2} - \frac{1}{3} \right) \right\} \right] \\
&= \frac{37}{12} - \left[\frac{7}{4} + \left\{ \frac{5}{2} - \left(\frac{9-2}{6} \right) \right\} \right] \\
&= \frac{37}{12} - \left[\frac{7}{4} + \left\{ \frac{5}{2} - \frac{7}{6} \right\} \right] \\
&= \frac{37}{12} - \left[\frac{7}{4} + \left\{ \frac{15-7}{6} \right\} \right] \\
&= \frac{37}{12} - \left[\frac{7}{4} + \frac{8}{6} \right] \\
&= \frac{37}{12} - \left[\frac{21+16}{12} \right] \\
&= \frac{37}{12} - \frac{37}{12} = 0
\end{aligned}$$

$$\begin{aligned}
10. \quad & 5\frac{1}{2} - \left[2\frac{1}{3} \div \left\{ \frac{3}{4} - \frac{1}{2} \times \left(\frac{2-1}{3-24} \right) \right\} \right] \\
&= \frac{11}{2} - \left[\frac{7}{3} \div \left\{ \frac{3}{4} - \frac{1}{2} \times \left(\frac{16-1}{24} \right) \right\} \right] \\
&= \frac{11}{2} - \left[\frac{7}{3} \div \left\{ \frac{3}{4} - \frac{1}{2} \times \frac{15}{24} \right\} \right] \\
&= \frac{11}{2} - \left[\frac{7}{3} \div \left\{ \frac{3}{4} - \frac{5}{16} \right\} \right] \\
&= \frac{11}{2} - \left[\frac{7}{3} \div \left\{ \frac{12-5}{16} \right\} \right] \\
&= \frac{11}{2} - \left[\frac{7}{3} \div \frac{7}{16} \right] \\
&= \frac{11}{2} - \left[\frac{7}{3} \times \frac{16}{7} \right] \\
&= \frac{11}{2} - \frac{16}{3} \\
&= \frac{33-32}{6} = \frac{1}{6}
\end{aligned}$$

$$\begin{aligned}
9. \quad & 3\frac{1}{3} \text{ of } \frac{1}{2} + 2 \div \left[2 \times \left\{ 2 - \left(2 - \frac{1}{5} \right) \right\} \right] \\
&= \frac{10}{3} \text{ of } \frac{1}{2} + 2 \div \left[2 \times \left\{ 2 - \left(\frac{10-1}{5} \right) \right\} \right] \\
&= \frac{10}{3} \text{ of } \frac{1}{2} + 2 \div \left[2 \times \left\{ 2 - \frac{9}{5} \right\} \right] \\
&= \frac{10}{3} \text{ of } \frac{1}{2} + 2 \div \left[2 \times \left\{ \frac{10-9}{5} \right\} \right] \\
&= \frac{10}{3} \text{ of } \frac{1}{2} + 2 \div \left[2 \times \frac{1}{5} \right] \\
&= \frac{5}{3} \text{ of } \frac{1}{2} + 2 \div \frac{2}{5} \\
&= \frac{5}{3} + \frac{2^1}{1} \times \frac{5}{2} \\
&= \frac{5+15}{3} = \frac{20}{3} = 6\frac{2}{3}
\end{aligned}$$

$$\begin{aligned}
11. \quad & \left[2 + 5 \times \left\{ 1\frac{1}{2} + \left(\frac{3}{4} - \frac{1}{10} \right) \right\} \right] + 1\frac{1}{2} \\
&= \left[2 + 5 \times \left\{ \frac{4}{2} + \left(\frac{15-2}{20} \right) \right\} \right] + \frac{4}{2} \\
&= \left[2 + 5 \times \left\{ \frac{4}{2} + \frac{13}{20} \right\} \right] + \frac{4}{2} \\
&= \left[2 + 5 \times \left\{ \frac{40+13}{20} \right\} \right] + \frac{4}{2} \\
&= \left[2 + 5 \times \frac{53}{20} \right] + \frac{4}{2} \\
&= \left[\frac{8+53}{4} \right] + \frac{4}{2} \\
&= \frac{61}{4} + \frac{4}{2} \\
&= \frac{61+8}{4} = \frac{69}{4} = 17\frac{1}{4}
\end{aligned}$$