

1. a)  $... = 2\frac{1}{6} + \frac{1}{2} - \frac{2}{5} = 2\frac{5}{30} + \frac{15}{30} - \frac{12}{30} = 2\frac{8}{30} = 2\frac{4}{15}$

b)  $... = 19 + \frac{18}{7} = 19 + 2\frac{4}{7} = 21\frac{4}{7}$

c)  $... = 2\frac{5}{20} + \frac{3}{20} - \frac{5}{20} + \frac{11}{20} = 2\frac{14}{20} = 2\frac{7}{10}$

d)  $... = 4\frac{2}{3} + \frac{13}{2} \cdot \frac{11}{8} - \frac{5}{24} = 4\frac{2}{3} + \frac{143}{16} - \frac{5}{24} = 4\frac{32}{48} + 8\frac{45}{48} - \frac{10}{48} = 13\frac{19}{48}$

2. a)  $\frac{24}{5} : \frac{48}{49} = \frac{24}{5} \cdot \frac{49}{48} = \frac{49}{10} = 4\frac{9}{10}$

b)  $\frac{35}{6} : \left(\frac{40}{9} \cdot \frac{3}{8}\right) = \frac{35}{6} : \frac{5}{3} = \frac{35}{6} \cdot \frac{3}{5} = \frac{7}{2} = 3\frac{1}{2}$

c)  $\frac{16}{3} : \left(\frac{27}{4} \cdot \frac{16}{9}\right) = \frac{16}{3} : 12 = \frac{16}{3 \cdot 12} = \frac{4}{9}$

d)  $5\frac{5}{6} : \frac{1}{4} = \frac{35}{6} \cdot 4 = \frac{70}{3} = 23\frac{1}{3}$

e)  $18\frac{1}{4} - 14 + 2 = 6\frac{1}{4}$

f)  $\frac{3}{10} + \frac{9}{20} - \frac{5}{20} = \frac{10}{20} = \frac{1}{2}$

3. a)  $93 + 15 - 88 = 20$

b)  $49 + 44 + 9 = 102$

c)  $\left(\frac{27}{42} + 2\frac{20}{42}\right) - \frac{15}{7} \cdot \frac{5}{6} = 3\frac{5}{42} - 1\frac{33}{42} = 1\frac{14}{42} = 1\frac{1}{3}$

d)  $\frac{70}{9} \cdot \frac{33}{85} + \frac{45}{8} \cdot \frac{108}{85} = \frac{14}{3} \cdot \frac{11}{17} + \frac{9}{2} \cdot \frac{27}{17} = 3\frac{1}{51} + 7\frac{5}{34} = 10\frac{17}{102} = 10\frac{1}{6}$

4. a)  $\left(\frac{5}{3}\right)^2 + \frac{11}{8} \cdot \frac{2}{3} = \frac{25}{9} + \frac{11}{12} = \frac{100}{36} + \frac{33}{36} = \frac{133}{36} = 3\frac{25}{36}$

b)  $\frac{1}{5} : \frac{1}{5} - \frac{3}{10} = 1 - \frac{3}{10} = \frac{7}{10}$

c)  $\frac{1}{2} + \frac{9}{7} = \frac{25}{14} = 1\frac{11}{14}$

$$\begin{aligned}
5. \quad \dots &= \left[ \left( \frac{24}{7} \cdot \frac{25}{8} - \frac{13}{6} \cdot \frac{45}{13} \right) : 3 + 5 \frac{4}{7} \right] : \left( 1 \frac{21}{28} + \frac{20}{28} \right) = \\
&= \left[ \left( \frac{75}{7} - \frac{15}{2} \right) : 3 + 5 \frac{4}{7} \right] : \frac{69}{28} = \left[ \left( \frac{150}{14} - \frac{105}{14} \right) : 3 + 5 \frac{8}{14} \right] : \frac{28}{69} = \\
&= \left[ 1 \frac{1}{14} + 5 \frac{8}{14} \right] : \frac{28}{69} = \frac{93}{14} \cdot \frac{28}{69} = \frac{31}{1} \cdot \frac{2}{23} = \frac{62}{23} = 2 \frac{16}{23}
\end{aligned}$$

$$\begin{aligned}
6. \quad \dots &= \left[ \left( \frac{7}{4} \cdot \frac{6}{7} + 9 \right) \cdot \frac{2}{105} \right] : \left( \frac{3}{5} - \frac{5}{3 \cdot 10} \right) = \left[ \left( \frac{3}{2} + 9 \right) \cdot \frac{2}{105} \right] : \left( \frac{3}{5} - \frac{1}{6} \right) = \\
&= \left[ \frac{21}{2} \cdot \frac{2}{105} \right] : \frac{13}{30} = \frac{1}{5} \cdot \frac{30}{13} = \frac{6}{13}
\end{aligned}$$

$$\begin{aligned}
7. \quad \dots &= 5 \frac{1}{5} - 1 \frac{4}{5} \cdot \left( 1 \frac{1}{2} + \frac{7}{3} \cdot \frac{2}{7} \right) + \left( 5 \frac{23}{21} - 3 \frac{14}{21} \right) : \left( \frac{7}{2} \cdot \frac{3}{14} \right) = \\
&= 5 \frac{1}{5} - \frac{9}{5} \cdot \left( 1 \frac{1}{2} + \frac{2}{3} \right) + 2 \frac{9}{21} : \frac{3}{4} = \\
&= 5 \frac{1}{5} - \frac{9}{5} \cdot \frac{13}{6} + \frac{51}{21} \cdot \frac{4}{3} = 5 \frac{1}{5} - \frac{39}{10} + \frac{68}{21} = 5 \frac{42}{210} - 3 \frac{189}{210} + 3 \frac{50}{210} = 4 \frac{113}{210}
\end{aligned}$$

$$\begin{aligned}
8. \quad \dots &= \left( 6 \frac{3}{4} + \frac{189}{4} \cdot \frac{2}{63} \right) : \left( 28 \frac{1}{2} - \frac{21}{2} \cdot \frac{5}{2} \right) = \left( 6 \frac{3}{4} + \frac{3}{2} \right) : \left( 28 \frac{1}{2} - 26 \frac{1}{4} \right) = \\
&= 8 \frac{1}{4} : 2 \frac{1}{4} = \frac{33}{4} \cdot \frac{4}{9} = \frac{11}{3} = 3 \frac{2}{3}
\end{aligned}$$

$$\begin{aligned}
9. \quad \dots &= \left( \frac{15}{4} \cdot \frac{187}{20} - \frac{85}{3} \cdot \frac{7}{40} \right) : \left[ 39 \frac{11}{12} - 4 \frac{1}{12} \cdot 4 \frac{4}{7} \right] = \\
&= \left( \frac{561}{16} - \frac{119}{24} \right) : \left[ 39 \frac{11}{12} - \frac{49}{12} \cdot \frac{32}{7} \right] = \\
&= \left( \frac{1683}{48} - \frac{238}{48} \right) : \left[ 39 \frac{11}{12} - \frac{56}{3} \right] = \frac{1445}{48} : \left[ 39 \frac{11}{12} - 18 \frac{8}{12} \right] = \\
&= \frac{1445}{48} : 21 \frac{1}{4} = \frac{1445}{48} \cdot \frac{4}{85} = \frac{17}{12} = 1 \frac{5}{12}
\end{aligned}$$