

Sect. 6.6

$$2a \quad (5 + \frac{7}{9}) \cdot \frac{3}{4} \div 3 = (5 + \frac{7}{9}) \cdot \frac{3}{4} \cdot \frac{1}{3} = (5 + \frac{7}{9}) \cdot \frac{1}{4}$$

$$= (\frac{45}{9} + \frac{7}{9}) \cdot \frac{1}{4} = \frac{52}{9} \cdot \frac{1}{4} = \frac{13}{9}$$

$$b. \quad 5 - (\frac{1}{6} \div (\frac{1}{3} - \frac{1}{5})) = 5 - (\frac{1}{6} \div \frac{2}{15}) = 5 - (\frac{1}{6} \times \frac{15}{2})$$

$$= 5 - \frac{15}{12} = 5 - 1\frac{1}{4} = 3\frac{3}{4} = \frac{15}{4}$$

$$c. \quad 4 \div ((12 \cdot \frac{2}{3}) \div \frac{7}{4}) = 4 \div (8 \times \frac{4}{7}) = 4 \div \frac{32}{7}$$

$$= 4 \times \frac{7}{32} = \frac{7}{8}$$

$$d. \quad [(\frac{1}{4} \cdot \frac{3}{4}) + (\frac{2}{3} \div \frac{4}{3})] \div \frac{11}{12} = [\frac{3}{16} + (\frac{2}{3} \times \frac{3}{4})] \div \frac{11}{12}$$

$$= [\frac{3}{16} + \frac{1}{2}] \times \frac{12}{11} = \frac{11}{16} \times \frac{12}{11} = \frac{12}{16} = \frac{3}{4}$$

$$e. \quad x(\frac{y}{x} + 2) - 2x = x \cdot \frac{y}{x} + x \cdot 2 - 2x = y$$

$$f. \quad y(x^2 \div 2) + 2 \div \frac{y}{3} = y \cdot \frac{x^2}{2} + 2 \cdot \frac{3}{y} = \frac{yx^2}{2} + \frac{32}{y}$$

$$= \frac{xy^2 + 32^2}{y^2}$$

$$6. a \quad \frac{1}{\frac{13}{88}} = 1 \div \frac{13}{88} = 1 \times \frac{88}{13} = \frac{88}{13}$$

$$b. \quad \frac{\frac{34}{40}}{17} = \frac{34}{40} \div \frac{17}{1} = \frac{34}{40} \times \frac{1}{17} = \frac{2}{40} = \frac{1}{20}$$

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$$6c \quad \frac{\frac{9}{16}}{\frac{3}{4}} = \frac{9}{16} \div \frac{3}{4} = \frac{9}{16} \times \frac{4}{3} = \frac{3}{4}$$

$$d \quad \frac{\frac{132}{256}}{\frac{11}{16}} = \frac{132}{256} \div \frac{11}{16} = \frac{132}{256} \times \frac{16}{11} = \frac{12}{16} = \frac{3}{4}$$

$$e \quad \frac{\frac{\frac{3}{2}}{5}}{\frac{7}{8}} = \frac{\frac{3}{2} \div \frac{5}{6}}{\frac{7}{8}} = \frac{\frac{3}{2} \times \frac{6}{5}}{\frac{7}{8}} = \frac{\frac{9}{5}}{\frac{7}{8}} = \frac{9}{5} \div \frac{7}{8} = \frac{9}{5} \times \frac{8}{7} = \frac{72}{35}$$

$$g \quad \frac{\frac{3}{4} + \frac{3}{8}}{\frac{3}{4} - \frac{3}{8}} = \frac{\frac{6}{8} + \frac{3}{8}}{\frac{6}{8} - \frac{3}{8}} = \frac{\frac{9}{8}}{\frac{3}{8}} = \frac{9}{8} \div \frac{3}{8} = \frac{9}{8} \times \frac{8}{3} = 3$$

$$i \quad \frac{5\frac{1}{2} - 2\frac{1}{3} + 1\frac{5}{6}}{6\frac{3}{8} - 2\frac{5}{6} - 2\frac{1}{4}} = \frac{5\frac{3}{6} - 2\frac{2}{6} + 1\frac{5}{6}}{6\frac{9}{24} - 2\frac{20}{24} - 2\frac{6}{24}} = \frac{3\frac{1}{6} + 1\frac{5}{6}}{3\frac{13}{24} - 2\frac{6}{24}} = \frac{5}{1\frac{7}{24}} = \frac{5}{\frac{31}{24}} = 5 \div \frac{31}{24} = 5 \times \frac{24}{31} = \frac{120}{31}$$