

FRACTIONS 1

1) Write the missing numerators:

a) $\frac{x}{28} = \frac{3}{2}$

b) $\frac{-12}{5} = \frac{x}{15}$

2) Write the missing denominators:

a) $\frac{72}{x} = \frac{30}{35}$

b) $\frac{2}{7} = \frac{4}{x}$

3) Cancel these fractions to their lowest terms, without using a calculator:

a) $\frac{24}{36} =$

b) $\frac{75}{55} =$

c) $\frac{84}{240} =$

d) $\frac{50}{120} =$

4) Calculate and simplify:

a) $\frac{2}{3} - \frac{3}{5} =$

b) $\frac{2}{3} \cdot \frac{3}{5} + \frac{7}{10} =$

c) $3 \cdot \frac{2}{7} - \frac{1}{7} \div 2 =$

d) $-1 + \frac{3}{4} - \frac{5}{6} =$

e) $\frac{2}{5} - \frac{3}{7} + \frac{1}{10} - \frac{3}{14} =$

f) $\frac{2}{5} - \frac{1}{3} \cdot \left(4 - \frac{4}{3}\right) =$

g) $3 \cdot \left(\frac{2}{7} - \frac{1}{7}\right) + 2 \div \frac{5}{7} =$

h) $\frac{2}{3} \cdot \left(\frac{3}{5} - \frac{1}{3}\right) + \frac{7}{5} \cdot \frac{1}{3} =$

SOLUTIONS

1) Write the missing numerators:

a) $\frac{x}{28} = \frac{3}{2} \rightarrow 2x = 3 \cdot 28 \rightarrow x = 42$

b) $\frac{-12}{5} = \frac{x}{15} \rightarrow -12 \cdot 15 = 5x \rightarrow x = -36$

2) Write the missing denominators:

a) $\frac{72}{x} = \frac{30}{35} \rightarrow 72 \cdot 35 = 30x \rightarrow x = 84$

b) $\frac{2}{7} = \frac{4}{x} \rightarrow 2x = 4 \cdot 7 \rightarrow x = 14$

3) Cancel these fractions to their lowest terms, without using a calculator:

a) $\frac{24}{36} = \frac{8}{12} = \frac{2}{3}$

b) $\frac{75}{55} = \frac{15}{11}$

c) $\frac{84}{240} = \frac{21}{60} = \frac{7}{20}$

d) $\frac{50}{120} = \frac{5}{12}$

4) Calculate and simplify:

a) $\frac{2}{3} - \frac{3}{5} = \frac{10}{15} - \frac{9}{15} = \frac{1}{15}$

b) $\frac{2}{3} \cdot \frac{3}{5} + \frac{7}{10} = \frac{2}{5} + \frac{7}{10} = \frac{4+7}{10} = \frac{11}{10}$

c) $3 \cdot \frac{2}{7} - \frac{1}{7} \div 2 = \frac{6}{7} - \frac{1}{14} = \frac{12-1}{14} = \frac{11}{14}$

d) $-1 + \frac{3}{4} - \frac{5}{6} = -\frac{12}{12} + \frac{9}{12} - \frac{10}{12} = -\frac{13}{12}$

e) $\frac{2}{5} - \frac{3}{7} + \frac{1}{10} - \frac{3}{14} = \frac{28}{70} - \frac{30}{70} + \frac{7}{70} - \frac{15}{70} = -\frac{10}{70} = -\frac{1}{7}$

f) $\frac{2}{5} - \frac{1}{3} \cdot \left(4 - \frac{4}{3}\right) = \frac{2}{5} - \frac{1}{3} \cdot \frac{8}{3} = \frac{2}{5} - \frac{8}{9} = \frac{18-40}{45} = -\frac{22}{45}$

g) $3 \cdot \left(\frac{2}{7} - \frac{1}{7}\right) + 2 \div \frac{5}{7} = 3 \cdot \frac{1}{7} + \frac{14}{5} = \frac{3}{7} + \frac{14}{5} = \frac{15+98}{35} = \frac{113}{35}$

h) $\frac{2}{3} \cdot \left(\frac{3}{5} - \frac{1}{3}\right) + \frac{7}{5} \cdot \frac{1}{3} = \frac{2}{3} \cdot \frac{4}{15} + \frac{7}{15} = \frac{8}{45} + \frac{7}{15} = \frac{8+21}{45} = \frac{29}{45}$