Samples **Fractions SOLUTIONS**

1.

$$\begin{aligned}
\left(\frac{-10}{-5} \div \frac{-42}{-23} + \frac{-14}{-42}\right) \div \frac{50}{31} &= \left(\frac{10}{5} \times \frac{23}{42} + \frac{-14}{-42}\right) \div \frac{50}{31} \\
&= \left(\frac{\cancel{5} \times \cancel{2}}{\cancel{5}} \times \frac{23}{\cancel{2} \times 21} + \frac{-14}{-42}\right) \div \frac{50}{31} \\
&= \left(\frac{1}{1} \times \frac{23}{21} + \frac{-14}{-42}\right) \div \frac{50}{31} \\
&= \left(\frac{1 \times 23}{1 \times 21} + \frac{-14}{-42}\right) \div \frac{50}{31} \\
&= \left(\frac{23}{21} + \frac{-14}{-42}\right) \div \frac{50}{31} \\
&= \left(\frac{23 \times 2}{21 \times 2} + \frac{14}{42}\right) \div \frac{50}{31} \\
&= \frac{46 + 14}{42} \div \frac{50}{31} \\
&= \frac{60}{42} \div \frac{50}{31} \\
&= \frac{\cancel{6} \times 10}{\cancel{6} \times 7} \div \frac{50}{31} \\
&= \frac{10}{7} \div \frac{50}{31} \\
&= \frac{10}{7} \times \frac{31}{50} \\
&= \frac{\cancel{10}}{7} \times \frac{31}{\cancel{10} \times 5} \\
&= \frac{1}{7} \times \frac{31}{5} \\
&= \frac{1 \times 31}{7 \times 5} \\
&= \frac{31}{35}
\end{aligned}$$

2.

$$\begin{aligned}
\frac{-5}{7} \times \frac{-4}{-35} \times \frac{33}{11} \times \frac{-36}{-27} &= \frac{\cancel{5} \times (-1)}{7} \times \frac{4}{\cancel{5} \times 7} \times \frac{33}{11} \times \frac{-36}{-27} \\
&= \frac{-1}{7} \times \frac{4}{7} \times \frac{33}{11} \times \frac{-36}{-27} \\
&= \frac{-1 \times 4}{7 \times 7} \times \frac{33}{11} \times \frac{-36}{-27} \\
&= \frac{-4}{49} \times \frac{33}{11} \times \frac{-36}{-27} \\
&= \frac{-4}{49} \times \frac{\cancel{11} \times 3}{\cancel{11}} \times \frac{-36}{-27} \\
&= \frac{-4}{49} \times \frac{3}{1} \times \frac{-36}{-27} \\
&= \frac{-4 \times 3}{49 \times 1} \times \frac{-36}{-27} \\
&= \frac{-12}{49} \times \frac{-36}{-27} \\
&= \frac{\cancel{3} \times (-4)}{49} \times \frac{\cancel{9} \times 4}{\cancel{9} \times \cancel{3}} \\
&= \frac{-4}{49} \times \frac{4}{1} \\
&= \frac{-4 \times 4}{49 \times 1} \\
&= \frac{-16}{49} \\
&= -\frac{16}{49}
\end{aligned}$$

3.

$$\begin{aligned}
\left(\frac{9}{-7} \times \frac{-49}{-21} + \frac{-60}{-20}\right) \times \frac{-53}{-7} &= \left(\frac{\cancel{3} \times (-3)}{\cancel{7}} \times \frac{\cancel{7} \times \cancel{7}}{\cancel{7} \times \cancel{3}} + \frac{-60}{-20}\right) \times \frac{-53}{-7} \\
&= \left(\frac{-3}{1} \times \frac{1}{1} + \frac{-60}{-20}\right) \times \frac{-53}{-7} \\
&= \left(\frac{-3 \times 1}{1 \times 1} + \frac{-60}{-20}\right) \times \frac{-53}{-7} \\
&= \left(\frac{-3}{1} + \frac{-60}{-20}\right) \times \frac{-53}{-7} \\
&= \left(\frac{-3 \times 20}{1 \times 20} + \frac{60}{20}\right) \times \frac{-53}{-7} \\
&= \frac{-60 + 60}{20} \times \frac{-53}{-7} \\
&= \frac{0}{20} \times \frac{-53}{-7} \\
&= 0 \times \frac{-53}{-7} \\
&= 0
\end{aligned}$$