

Order of Operations with Fractions (J)

Name: _____

Date: _____

Simplify each expression using the correct order of operations.

$$\frac{1}{6} \times \left(\frac{7}{8} + \frac{3}{8} - \frac{1}{8} \right) \div \left(\frac{4}{5} \times \left(\frac{5}{9} \div \frac{2}{9} \right) \right)$$

$$\left(\left(\frac{3}{4} + \frac{5}{6} \right) \times \frac{3}{8} \right) \div \frac{1}{8} - \frac{5}{8} - \frac{1}{6} \times \frac{1}{2}$$

$$\frac{7}{8} - \frac{2}{3} + \frac{1}{8} \div \left(\frac{5}{8} \times \left(\frac{4}{9} \times \left(\frac{3}{4} \div \frac{3}{8} \right) \right) \right)$$

$$\frac{3}{8} + \frac{5}{8} - \frac{7}{8} \times \left(\frac{2}{5} \div \left(\left(\frac{4}{5} \div \frac{1}{4} \right) \times \frac{3}{4} \right) \right)$$

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$$\begin{aligned}
 & \frac{1}{6} \times \left(\frac{7}{8} + \frac{3}{8} - \frac{1}{8} \right) \div \left(\frac{4}{5} \times \left(\frac{5}{9} \div \frac{2}{9} \right) \right) \\
 &= \frac{1}{6} \times \left(\frac{5}{4} - \frac{1}{8} \right) \div \left(\frac{4}{5} \times \left(\frac{5}{9} \div \frac{2}{9} \right) \right) \\
 &= \frac{1}{6} \times \frac{9}{8} \div \left(\frac{4}{5} \times \left(\frac{5}{9} \div \frac{2}{9} \right) \right) \\
 &= \frac{1}{6} \times \frac{9}{8} \div \left(\frac{4}{5} \times \frac{5}{2} \right) \\
 &= \frac{1}{6} \times \frac{9}{8} \div 2 \\
 &= \frac{3}{16} \div 2 \\
 &= \frac{3}{32}
 \end{aligned}$$

$$\begin{aligned}
 & \left(\left(\frac{3}{4} + \frac{5}{6} \right) \times \frac{3}{8} \right) \div \frac{1}{8} - \frac{5}{8} - \frac{1}{6} \times \frac{1}{2} \\
 &= \left(\frac{19}{12} \times \frac{3}{8} \right) \div \frac{1}{8} - \frac{5}{8} - \frac{1}{6} \times \frac{1}{2} \\
 &= \frac{19}{32} \div \frac{1}{8} - \frac{5}{8} - \frac{1}{6} \times \frac{1}{2} \\
 &= \frac{19}{4} - \frac{5}{8} - \frac{1}{6} \times \frac{1}{2} \\
 &= \frac{19}{4} - \frac{5}{8} - \frac{1}{12} \\
 &= \frac{33}{8} - \frac{1}{12} \\
 &= \frac{97}{24} \\
 &= 4\frac{1}{24}
 \end{aligned}$$

$$\begin{aligned}
 & \frac{7}{8} - \frac{2}{3} + \frac{1}{8} \div \left(\frac{5}{8} \times \left(\frac{4}{9} \times \left(\frac{3}{4} \div \frac{3}{8} \right) \right) \right) \\
 &= \frac{7}{8} - \frac{2}{3} + \frac{1}{8} \div \left(\frac{5}{8} \times \left(\frac{4}{9} \times 2 \right) \right) \\
 &= \frac{7}{8} - \frac{2}{3} + \frac{1}{8} \div \left(\frac{5}{8} \times \frac{8}{9} \right) \\
 &= \frac{7}{8} - \frac{2}{3} + \frac{1}{8} \div \frac{5}{9} \\
 &= \frac{7}{8} - \frac{2}{3} + \frac{9}{40} \\
 &= \frac{5}{24} + \frac{9}{40} \\
 &= \frac{13}{30}
 \end{aligned}$$

$$\begin{aligned}
 & \frac{3}{8} + \frac{5}{8} - \frac{7}{8} \times \left(\frac{2}{5} \div \left(\left(\frac{4}{5} \div \frac{1}{4} \right) \times \frac{3}{4} \right) \right) \\
 &= \frac{3}{8} + \frac{5}{8} - \frac{7}{8} \times \left(\frac{2}{5} \div \left(\frac{16}{5} \times \frac{3}{4} \right) \right) \\
 &= \frac{3}{8} + \frac{5}{8} - \frac{7}{8} \times \left(\frac{2}{5} \div \frac{12}{5} \right) \\
 &= \frac{3}{8} + \frac{5}{8} - \frac{7}{8} \times \frac{1}{6} \\
 &= \frac{3}{8} + \frac{5}{8} - \frac{7}{48} \\
 &= 1 - \frac{7}{48} \\
 &= \frac{41}{48}
 \end{aligned}$$