

Order of Operations with Fractions (C)

Name: _____

Date: _____

Simplify each expression using the correct order of operations.

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

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

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

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

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$$\begin{aligned} & \left(\left(\frac{3}{8} \right)^2 + \frac{7}{8} - \frac{1}{8} \right) \div \frac{1}{4} \times \left(\frac{1}{3} \right)^2 \\ & = \left(\frac{9}{64} + \frac{7}{8} - \frac{1}{8} \right) \div \frac{1}{4} \times \left(\frac{1}{3} \right)^2 \\ & = \left(\frac{65}{64} - \frac{1}{8} \right) \div \frac{1}{4} \times \left(\frac{1}{3} \right)^2 \\ & = \frac{57}{64} \div \frac{1}{4} \times \left(\frac{1}{3} \right)^2 \\ & = \frac{57}{64} \div \frac{1}{4} \times \frac{1}{9} \\ & = \frac{57}{16} \times \frac{1}{9} \\ & = \frac{19}{48} \end{aligned}$$

$$\begin{aligned} & \left(\left(\frac{1}{3} \right)^2 - \frac{1}{9} + \left(\frac{2}{9} \right)^2 \right) \div \left(\frac{1}{2} \times \frac{4}{9} \right) \\ & = \left(\frac{1}{9} - \frac{1}{9} + \left(\frac{2}{9} \right)^2 \right) \div \left(\frac{1}{2} \times \frac{4}{9} \right) \\ & = \left(\frac{1}{9} - \frac{1}{9} + \frac{4}{81} \right) \div \left(\frac{1}{2} \times \frac{4}{9} \right) \\ & = \left(0 + \frac{4}{81} \right) \div \left(\frac{1}{2} \times \frac{4}{9} \right) \\ & = \frac{4}{81} \div \left(\frac{1}{2} \times \frac{4}{9} \right) \\ & = \frac{4}{81} \div \frac{2}{9} \\ & = \frac{2}{9} \end{aligned}$$

$$\begin{aligned} & \left(\left(\frac{1}{3} \right)^2 \div \left(\frac{1}{6} \right)^2 + \frac{1}{2} \right) \times \frac{1}{4} - \frac{3}{5} \\ & = \left(\frac{1}{9} \div \left(\frac{1}{6} \right)^2 + \frac{1}{2} \right) \times \frac{1}{4} - \frac{3}{5} \\ & = \left(\frac{1}{9} \div \frac{1}{36} + \frac{1}{2} \right) \times \frac{1}{4} - \frac{3}{5} \\ & = \left(4 + \frac{1}{2} \right) \times \frac{1}{4} - \frac{3}{5} \\ & = \frac{9}{2} \times \frac{1}{4} - \frac{3}{5} \\ & = \frac{9}{8} - \frac{3}{5} \\ & = \frac{21}{40} \end{aligned}$$

$$\begin{aligned} & \left(\frac{1}{6} + \frac{8}{9} \div \frac{1}{3} - \frac{5}{6} \right)^3 \times \frac{1}{5} \div \frac{7}{9} \\ & = \left(\frac{1}{6} + \frac{8}{3} - \frac{5}{6} \right)^3 \times \frac{1}{5} \div \frac{7}{9} \\ & = \left(\frac{17}{6} - \frac{5}{6} \right)^3 \times \frac{1}{5} \div \frac{7}{9} \\ & = 2^3 \times \frac{1}{5} \div \frac{7}{9} \\ & = 8 \times \frac{1}{5} \div \frac{7}{9} \\ & = \frac{8}{5} \div \frac{7}{9} \\ & = \frac{72}{35} \\ & = 2\frac{2}{35} \end{aligned}$$