

Order of Operations with Fractions (I)

Name: _____

Date: _____

Simplify each expression using the correct order of operations.

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

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

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

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

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Simplify each expression using the correct order of operations.

$$\begin{aligned} & \frac{7}{9} \div \left(\frac{4}{9} + \frac{7}{8} \right) \times \left(\frac{3}{4} - \frac{5}{8} \div \frac{5}{6} \right)^2 \\ &= \frac{7}{9} \div \frac{95}{72} \times \left(\frac{3}{4} - \frac{5}{8} \div \frac{5}{6} \right)^2 \\ &= \frac{7}{9} \div \frac{95}{72} \times \left(\frac{3}{4} - \frac{3}{4} \right)^2 \\ &= \frac{7}{9} \div \frac{95}{72} \times \underline{0^2} \\ &= \frac{7}{9} \div \frac{95}{72} \times 0 \\ &= \frac{56}{95} \times 0 \\ &= 0 \end{aligned}$$

$$\begin{aligned} & \frac{2}{9} \div \left(\frac{8}{9} - \frac{7}{9} \right) \times \left(\frac{1}{4} \right)^2 + \frac{5}{9} - \frac{1}{6} \\ &= \frac{2}{9} \div \frac{1}{9} \times \left(\frac{1}{4} \right)^2 + \frac{5}{9} - \frac{1}{6} \\ &= \frac{2}{9} \div \frac{1}{9} \times \frac{1}{16} + \frac{5}{9} - \frac{1}{6} \\ &= \underline{2} \times \frac{1}{16} + \frac{5}{9} - \frac{1}{6} \\ &= \frac{1}{8} + \frac{5}{9} - \frac{1}{6} \\ &= \frac{49}{72} - \frac{1}{6} \\ &= \frac{37}{72} \end{aligned}$$

$$\begin{aligned} & \frac{3}{5} \times \left(\frac{8}{9} - \frac{1}{9} \div \frac{1}{5} + \frac{1}{2} - \left(\frac{1}{3} \right)^2 \right) \\ &= \frac{3}{5} \times \left(\frac{8}{9} - \frac{1}{9} \div \frac{1}{5} + \frac{1}{2} - \frac{1}{9} \right) \\ &= \frac{3}{5} \times \left(\frac{8}{9} - \frac{5}{9} + \frac{1}{2} - \frac{1}{9} \right) \\ &= \frac{3}{5} \times \left(\frac{1}{3} + \frac{1}{2} - \frac{1}{9} \right) \\ &= \frac{3}{5} \times \left(\frac{5}{6} - \frac{1}{9} \right) \\ &= \frac{3}{5} \times \frac{13}{18} \\ &= \frac{13}{30} \end{aligned}$$

$$\begin{aligned} & \frac{2}{9} + \frac{1}{3} \times \left(\left(\frac{8}{9} - \frac{5}{9} \right)^3 \div \left(\frac{1}{4} \right)^2 \right) \\ &= \frac{2}{9} + \frac{1}{3} \times \left(\left(\frac{1}{3} \right)^3 \div \left(\frac{1}{4} \right)^2 \right) \\ &= \frac{2}{9} + \frac{1}{3} \times \left(\frac{1}{27} \div \left(\frac{1}{4} \right)^2 \right) \\ &= \frac{2}{9} + \frac{1}{3} \times \left(\frac{1}{27} \div \frac{1}{16} \right) \\ &= \frac{2}{9} + \frac{1}{3} \times \frac{16}{27} \\ &= \frac{2}{9} + \frac{16}{81} \\ &= \frac{34}{81} \end{aligned}$$