

Order of Operations with Fractions (H)

Name: _____

Date: _____

Simplify each expression using the correct order of operations.

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

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

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

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

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$$\begin{aligned} & \left(\frac{1}{2} \times \frac{1}{6} \right) \div \left(\frac{8}{9} + \frac{2}{9} - \frac{4}{9} - \frac{5}{9} \right) \\ &= \frac{1}{12} \div \left(\frac{8}{9} + \frac{2}{9} - \frac{4}{9} - \frac{5}{9} \right) \\ &= \frac{1}{12} \div \left(\frac{10}{9} - \frac{4}{9} - \frac{5}{9} \right) \\ &= \frac{1}{12} \div \left(\frac{2}{3} - \frac{5}{9} \right) \\ &= \frac{1}{12} \div \frac{1}{9} \\ &= \frac{3}{4} \end{aligned}$$

$$\begin{aligned} & \left(\left(\frac{7}{8} - \frac{1}{4} \right) \times \frac{8}{9} \right) \div \left(\frac{1}{9} + \frac{3}{8} + \frac{3}{4} \right) \\ &= \left(\frac{5}{8} \times \frac{8}{9} \right) \div \left(\frac{1}{9} + \frac{3}{8} + \frac{3}{4} \right) \\ &= \frac{5}{9} \div \left(\frac{1}{9} + \frac{3}{8} + \frac{3}{4} \right) \\ &= \frac{5}{9} \div \left(\frac{35}{72} + \frac{3}{4} \right) \\ &= \frac{5}{9} \div \frac{89}{72} \\ &= \frac{40}{89} \end{aligned}$$

$$\begin{aligned} & \left(\frac{8}{9} + \frac{1}{2} \right) \times \frac{3}{5} - \frac{5}{9} \div \left(\frac{2}{3} + \frac{4}{9} \right) \\ &= \frac{25}{18} \times \frac{3}{5} - \frac{5}{9} \div \left(\frac{2}{3} + \frac{4}{9} \right) \\ &= \frac{25}{18} \times \frac{3}{5} - \frac{5}{9} \div \frac{10}{9} \\ &= \frac{5}{6} - \frac{5}{9} \div \frac{10}{9} \\ &= \frac{5}{6} - \frac{1}{2} \\ &= \frac{1}{3} \end{aligned}$$

$$\begin{aligned} & \left(\frac{1}{6} \times \left(\frac{3}{4} + \frac{2}{3} \right) \right) \div \frac{5}{6} - \frac{2}{9} \div \frac{8}{9} \\ &= \left(\frac{1}{6} \times \frac{17}{12} \right) \div \frac{5}{6} - \frac{2}{9} \div \frac{8}{9} \\ &= \frac{17}{72} \div \frac{5}{6} - \frac{2}{9} \div \frac{8}{9} \\ &= \frac{17}{60} - \frac{2}{9} \div \frac{8}{9} \\ &= \frac{17}{60} - \frac{1}{4} \\ &= \frac{1}{30} \end{aligned}$$