

Order of Operations with Fractions (H)

Name: _____

Date: _____

Simplify each expression using the correct order of operations.

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

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

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

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

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$$\begin{aligned} & \left(\frac{1}{9} \times \frac{3}{8} \right) \div \left(\frac{7}{8} - \frac{7}{9} + \left(\frac{5}{6} \right)^2 \right) \\ &= \frac{1}{24} \div \left(\frac{7}{8} - \frac{7}{9} + \left(\frac{5}{6} \right)^2 \right) \\ &= \frac{1}{24} \div \left(\frac{7}{8} - \frac{7}{9} + \frac{25}{36} \right) \\ &= \frac{1}{24} \div \left(\frac{7}{72} + \frac{25}{36} \right) \\ &= \frac{1}{24} \div \frac{19}{24} \\ &= \frac{1}{19} \end{aligned}$$

$$\begin{aligned} & \frac{2}{5} \div \left(\frac{5}{8} \times \frac{2}{9} + \frac{3}{4} - \left(\frac{2}{3} \right)^3 \right) \\ &= \frac{2}{5} \div \left(\frac{5}{8} \times \frac{2}{9} + \frac{3}{4} - \frac{8}{27} \right) \\ &= \frac{2}{5} \div \left(\frac{5}{36} + \frac{3}{4} - \frac{8}{27} \right) \\ &= \frac{2}{5} \div \left(\frac{8}{9} - \frac{8}{27} \right) \\ &= \frac{2}{5} \div \frac{16}{27} \\ &= \frac{27}{40} \end{aligned}$$

$$\begin{aligned} & \left(\frac{5}{8} \times \frac{4}{9} \right) \div \left(\frac{1}{6} + \left(\frac{1}{4} \right)^2 - \frac{1}{8} \right) \\ &= \frac{5}{18} \div \left(\frac{1}{6} + \left(\frac{1}{4} \right)^2 - \frac{1}{8} \right) \\ &= \frac{5}{18} \div \left(\frac{1}{6} + \frac{1}{16} - \frac{1}{8} \right) \\ &= \frac{5}{18} \div \left(\frac{11}{48} - \frac{1}{8} \right) \\ &= \frac{5}{18} \div \frac{5}{48} \\ &= \frac{8}{3} \\ &= 2\frac{2}{3} \end{aligned}$$

$$\begin{aligned} & \left(\frac{1}{9} \times \frac{4}{5} \right) \div \left(\frac{4}{9} \right)^2 + \frac{1}{5} - \frac{1}{2} \\ &= \frac{4}{45} \div \left(\frac{4}{9} \right)^2 + \frac{1}{5} - \frac{1}{2} \\ &= \frac{4}{45} \div \frac{16}{81} + \frac{1}{5} - \frac{1}{2} \\ &= \frac{9}{20} + \frac{1}{5} - \frac{1}{2} \\ &= \frac{13}{20} - \frac{1}{2} \\ &= \frac{3}{20} \end{aligned}$$