

Order of Operations with Fractions (F)

Name: _____

Date: _____

Simplify each expression using the correct order of operations.

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

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

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

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

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$$\begin{aligned} & \left(\frac{7}{9}\right)^2 \div \left(\frac{4}{9} \times \left(\frac{3}{4} + \frac{5}{9}\right)\right) \\ &= \left(\frac{7}{9}\right)^2 \div \left(\frac{4}{9} \times \frac{47}{36}\right) \\ &= \frac{\left(\frac{7}{9}\right)^2}{\frac{47}{81}} \div \frac{47}{81} \\ &= \frac{49}{81} \div \frac{47}{81} \\ &= \frac{49}{47} \\ &= 1\frac{2}{47} \end{aligned}$$

$$\begin{aligned} & \left(\frac{1}{5} \times \frac{8}{9} - \left(\frac{1}{6}\right)^2\right) \div \frac{3}{5} \\ &= \left(\frac{1}{5} \times \frac{8}{9} - \frac{1}{36}\right) \div \frac{3}{5} \\ &= \left(\frac{8}{45} - \frac{1}{36}\right) \div \frac{3}{5} \\ &= \frac{3}{20} \div \frac{3}{5} \\ &= \frac{1}{4} \end{aligned}$$

$$\begin{aligned} & \left(\frac{4}{9} + \left(\frac{1}{2}\right)^2 - \frac{1}{4}\right) \times \frac{7}{8} \\ &= \left(\frac{4}{9} + \frac{1}{4} - \frac{1}{4}\right) \times \frac{7}{8} \\ &= \left(\frac{25}{36} - \frac{1}{4}\right) \times \frac{7}{8} \\ &= \frac{4}{9} \times \frac{7}{8} \\ &= \frac{7}{18} \end{aligned}$$

$$\begin{aligned} & \frac{2}{5} \div \left(\left(\frac{3}{4}\right)^2 \times \frac{1}{9} + \frac{1}{6}\right) \\ &= \frac{2}{5} \div \left(\frac{9}{16} \times \frac{1}{9} + \frac{1}{6}\right) \\ &= \frac{2}{5} \div \left(\frac{1}{16} + \frac{1}{6}\right) \\ &= \frac{2}{5} \div \frac{11}{48} \\ &= \frac{96}{55} \\ &= 1\frac{41}{55} \end{aligned}$$