

## Order of Operations with Fractions (D)

Name: \_\_\_\_\_

Date: \_\_\_\_\_

Simplify each expression using the correct order of operations.

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

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

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

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

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Simplify each expression using the correct order of operations.

$$\begin{aligned} & \left( \frac{1}{2} - \frac{3}{8} \times \frac{4}{9} + \frac{1}{8} \right) \div \left( \frac{8}{9} - \left( \frac{2}{3} \right)^2 \right) \\ &= \left( \frac{1}{2} - \frac{1}{6} + \frac{1}{8} \right) \div \left( \frac{8}{9} - \left( \frac{2}{3} \right)^2 \right) \\ &= \left( \frac{1}{3} + \frac{1}{8} \right) \div \left( \frac{8}{9} - \left( \frac{2}{3} \right)^2 \right) \\ &= \frac{11}{24} \div \left( \frac{8}{9} - \left( \frac{2}{3} \right)^2 \right) \\ &= \frac{11}{24} \div \left( \frac{8}{9} - \frac{4}{9} \right) \\ &= \frac{11}{24} \div \frac{4}{9} \\ &= \frac{33}{32} \\ &= 1 \frac{1}{32} \end{aligned}$$

$$\begin{aligned} & \left( \left( \frac{2}{3} + \frac{1}{4} \right) \div \left( \frac{1}{2} \right)^2 - \frac{5}{9} \right) \times \frac{3}{4} \div \frac{1}{9} \\ &= \left( \frac{11}{12} \div \left( \frac{1}{2} \right)^2 - \frac{5}{9} \right) \times \frac{3}{4} \div \frac{1}{9} \\ &= \left( \frac{11}{12} \div \frac{1}{4} - \frac{5}{9} \right) \times \frac{3}{4} \div \frac{1}{9} \\ &= \left( \frac{11}{3} - \frac{5}{9} \right) \times \frac{3}{4} \div \frac{1}{9} \\ &= \frac{28}{9} \times \frac{3}{4} \div \frac{1}{9} \\ &= \frac{7}{3} \div \frac{1}{9} \\ &= 21 \end{aligned}$$

$$\begin{aligned} & \left( \left( \frac{5}{8} + \frac{1}{4} - \frac{7}{8} \right) \div \left( \frac{7}{9} \right)^2 \right)^2 \times \frac{1}{5} \\ &= \left( \left( \frac{7}{8} - \frac{7}{8} \right) \div \left( \frac{7}{9} \right)^2 \right)^2 \times \frac{1}{5} \\ &= \left( 0 \div \left( \frac{7}{9} \right)^2 \right)^2 \times \frac{1}{5} \\ &= \left( 0 \div \frac{49}{81} \right)^2 \times \frac{1}{5} \\ &= 0^2 \times \frac{1}{5} \\ &= 0 \times \frac{1}{5} \\ &= 0 \end{aligned}$$

$$\begin{aligned} & \left( \frac{3}{5} - \frac{3}{4} \times \frac{4}{5} \right) \div \frac{1}{2} + \left( \frac{5}{6} \right)^2 + \frac{2}{9} \\ &= \left( \frac{3}{5} - \frac{3}{5} \right) \div \frac{1}{2} + \left( \frac{5}{6} \right)^2 + \frac{2}{9} \\ &= 0 \div \frac{1}{2} + \left( \frac{5}{6} \right)^2 + \frac{2}{9} \\ &= 0 \div \frac{1}{2} + \frac{25}{36} + \frac{2}{9} \\ &= 0 + \frac{25}{36} + \frac{2}{9} \\ &= \frac{25}{36} + \frac{2}{9} \\ &= \frac{11}{12} \end{aligned}$$