Order of Operations with Fractions (D)

Name: _____

Date: _____

Simplify each expression using the correct order of operations.

$$\left(\frac{5}{6} \times \frac{7}{9} + \frac{5}{9} - \left(\frac{2}{3} \right)^2 \right) \div \frac{1}{4}$$

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

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

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

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$\left(\dfrac{5}{6} \times \dfrac{7}{9} + \dfrac{5}{9} - \left(\dfrac{2}{3}\right)^2\right) \div \dfrac{1}{4}$

$= \left(\dfrac{5}{6} \times \dfrac{7}{9} + \dfrac{5}{9} - \dfrac{4}{9}\right) \div \dfrac{1}{4}$

$= \left(\dfrac{35}{54} + \dfrac{5}{9} - \dfrac{4}{9}\right) \div \dfrac{1}{4}$

$= \left(\dfrac{65}{54} - \dfrac{4}{9}\right) \div \dfrac{1}{4}$

$= \dfrac{41}{54} \div \dfrac{1}{4}$

$= \dfrac{82}{27}$

$= 3\dfrac{1}{27}$

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

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

$= \dfrac{5}{8} \times \left(\dfrac{2}{9} + \dfrac{4}{9} - \dfrac{2}{5}\right)$

$= \dfrac{5}{8} \times \left(\dfrac{2}{3} - \dfrac{2}{5}\right)$

$= \dfrac{5}{8} \times \dfrac{4}{15}$

$= \dfrac{1}{6}$

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

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

$= \dfrac{9}{16} \times \dfrac{1}{3} \div \dfrac{5}{8} + \dfrac{2}{9}$

$= \dfrac{3}{16} \div \dfrac{5}{8} + \dfrac{2}{9}$

$= \dfrac{3}{10} + \dfrac{2}{9}$

$= \dfrac{47}{90}$

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

$= \dfrac{23}{45} \div \left(\dfrac{8}{9} - \left(\dfrac{1}{2}\right)^2\right) \times \dfrac{5}{8}$

$= \dfrac{23}{45} \div \left(\dfrac{8}{9} - \dfrac{1}{4}\right) \times \dfrac{5}{8}$

$= \dfrac{23}{45} \div \dfrac{23}{36} \times \dfrac{5}{8}$

$= \dfrac{4}{5} \times \dfrac{5}{8}$

$= \dfrac{1}{2}$