Order of Operations with Fractions (B)

Name: _____

Date: _____

Simplify each expression using the correct order of operations.

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

$$\left(\frac{2}{5} \div \frac{7}{9}\right) \times \left(\frac{1}{3} + \frac{5}{8} - \frac{8}{9} + \frac{4}{9} - \frac{3}{8}\right)$$

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

$$\frac{8}{9} \times \left(\frac{1}{6} + \frac{7}{8} - \frac{3}{4}\right) \div \left(\frac{5}{6} \div \left(\frac{2}{5} + \frac{1}{5}\right)\right)$$

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Simplify each expression using the correct order of operations.

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

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

$$= \frac{1}{6} \div \left(\frac{1}{10} + \frac{1}{9} + \frac{1}{3}\right) \div \frac{3}{5}$$

$$= \frac{1}{6} \div \left(\frac{19}{90} + \frac{1}{3}\right) \div \frac{3}{5}$$

$$= \frac{1}{6} \div \frac{49}{90} \div \frac{3}{5}$$

$$= \frac{15}{49} \div \frac{3}{5}$$

$$= \frac{25}{49}$$

$$\left(\frac{2}{5} \div \frac{7}{9}\right) \times \left(\frac{1}{3} + \frac{5}{8} - \frac{8}{9} + \frac{4}{9} - \frac{3}{8}\right)$$

$$= \frac{18}{35} \times \left(\frac{1}{3} + \frac{5}{8} - \frac{8}{9} + \frac{4}{9} - \frac{3}{8}\right)$$

$$= \frac{18}{35} \times \left(\frac{23}{24} - \frac{8}{9} + \frac{4}{9} - \frac{3}{8}\right)$$

$$= \frac{18}{35} \times \left(\frac{5}{72} + \frac{4}{9} - \frac{3}{8}\right)$$

$$= \frac{18}{35} \times \left(\frac{37}{72} - \frac{3}{8}\right)$$

$$= \frac{18}{35} \times \frac{5}{36}$$

$$= \frac{1}{14}$$

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

$$= \left(\frac{2}{5} \div \frac{1}{12}\right) \times \frac{3}{8} + \frac{1}{3} \times \frac{1}{5} + \frac{1}{9}$$

$$= \frac{24}{5} \times \frac{3}{8} + \frac{1}{3} \times \frac{1}{5} + \frac{1}{9}$$

$$= \frac{9}{5} + \frac{1}{3} \times \frac{1}{5} + \frac{1}{9}$$

$$= \frac{9}{5} + \frac{1}{15} + \frac{1}{9}$$

$$= \frac{28}{15} + \frac{1}{9}$$

$$= \frac{89}{45}$$

$$= 1\frac{44}{45}$$

$$\frac{8}{9} \times \left(\frac{1}{6} + \frac{7}{8} - \frac{3}{4}\right) \div \left(\frac{5}{6} \div \left(\frac{2}{5} + \frac{1}{5}\right)\right)$$

$$= \frac{8}{9} \times \left(\frac{25}{24} - \frac{3}{4}\right) \div \left(\frac{5}{6} \div \left(\frac{2}{5} + \frac{1}{5}\right)\right)$$

$$= \frac{8}{9} \times \frac{7}{24} \div \left(\frac{5}{6} \div \left(\frac{2}{5} + \frac{1}{5}\right)\right)$$

$$= \frac{8}{9} \times \frac{7}{24} \div \left(\frac{5}{6} \div \frac{3}{5}\right)$$

$$= \frac{8}{9} \times \frac{7}{24} \div \frac{25}{18}$$

$$= \frac{7}{27} \div \frac{25}{18}$$

$$= \frac{14}{75}$$