Order of Operations with Fractions (G)

Name: _____ Date: _____

Simplify each expression using the correct order of operations.

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

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

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

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

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

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

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

$= \frac{8}{9} \times \left(\frac{9}{32} - \frac{1}{4} + \frac{7}{8} \right)$

$= \frac{8}{9} \times \left(\frac{1}{32} + \frac{7}{8} \right)$

$= \frac{8}{9} \times \frac{29}{32}$

$= \frac{29}{36}$

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

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

$= \frac{2}{3} \div \frac{32}{45} \times \frac{1}{2} - \left(\frac{1}{4}\right)^2$

$= \frac{2}{3} \div \frac{32}{45} \times \frac{1}{2} - \frac{1}{16}$

$= \frac{15}{16} \times \frac{1}{2} - \frac{1}{16}$

$= \frac{15}{32} - \frac{1}{16}$

$= \frac{13}{32}$

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

$= \left(\frac{1}{4} + \left(\frac{1}{3}\right)^3 \div \frac{1}{18} \right) \times \left(\frac{2}{3}\right)^3$

$= \left(\frac{1}{4} + \frac{1}{27} \div \frac{1}{18} \right) \times \left(\frac{2}{3}\right)^3$

$= \left(\frac{1}{4} + \frac{2}{3} \right) \times \left(\frac{2}{3}\right)^3$

$= \frac{11}{12} \times \left(\frac{2}{3}\right)^3$

$= \frac{11}{12} \times \frac{8}{27}$

$= \frac{22}{81}$

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

$= \frac{11}{9} \times \left(\frac{3}{4}\right)^2 - \frac{1}{3} \div \frac{8}{9} + \frac{5}{6}$

$= \frac{11}{9} \times \frac{9}{16} - \frac{1}{3} \div \frac{8}{9} + \frac{5}{6}$

$= \frac{11}{16} - \frac{1}{3} \div \frac{8}{9} + \frac{5}{6}$

$= \frac{11}{16} - \frac{3}{8} + \frac{5}{6}$

$= \frac{5}{16} + \frac{5}{6}$

$= \frac{55}{48}$

$= 1\frac{7}{48}$