

Order of Operations with Fractions (D)

Name: _____

Date: _____

Simplify each expression using the correct order of operations.

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

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

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

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

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$$\begin{aligned} & \left(-\frac{1}{9}\right) + \left(\frac{1}{3}\right)^3 \div \left(\underline{\underline{\left(-\frac{1}{8}\right) - \left(-\frac{2}{9}\right)}}\right) \\ &= \left(-\frac{1}{9}\right) + \underline{\underline{\left(\frac{1}{3}\right)^3}} \div \frac{7}{72} \\ &= \left(-\frac{1}{9}\right) + \underline{\underline{\frac{1}{27} \div \frac{7}{72}}} \\ &= \underline{\underline{\left(-\frac{1}{9}\right) + \frac{8}{21}}} \\ &= \frac{17}{63} \end{aligned}$$

$$\begin{aligned} & \left(\left(-\frac{5}{9}\right) \times \underline{\underline{\left(-\frac{2}{3}\right)^2}} + \frac{5}{9}\right) \div \left(-\frac{1}{9}\right) \\ &= \left(\underline{\underline{\left(-\frac{5}{9}\right) \times \frac{4}{9}} + \frac{5}{9}}\right) \div \left(-\frac{1}{9}\right) \\ &= \left(\underline{\underline{\left(-\frac{20}{81}\right) + \frac{5}{9}}}\right) \div \left(-\frac{1}{9}\right) \\ &= \underline{\underline{\frac{25}{81} \div \left(-\frac{1}{9}\right)}} \\ &= -\frac{25}{9} \\ &= -2\frac{7}{9} \end{aligned}$$

$$\begin{aligned} & \left(\frac{1}{9}\right)^2 \div \left(\underline{\underline{\left(-\frac{1}{8}\right) + \frac{8}{9} - \frac{2}{3}}}\right) \\ &= \left(\frac{1}{9}\right)^2 \div \left(\underline{\underline{\frac{55}{72} - \frac{2}{3}}}\right) \\ &= \underline{\underline{\left(\frac{1}{9}\right)^2}} \div \frac{7}{72} \\ &= \underline{\underline{\frac{1}{81} \div \frac{7}{72}}} \\ &= \frac{8}{63} \end{aligned}$$

$$\begin{aligned} & \left(\underline{\underline{\frac{1}{3} \times \left(-\frac{1}{8}\right)}}\right) \div \left(-\frac{1}{2}\right)^2 - \left(-\frac{8}{9}\right) \\ &= \left(-\frac{1}{24}\right) \div \underline{\underline{\left(-\frac{1}{2}\right)^2}} - \left(-\frac{8}{9}\right) \\ &= \underline{\underline{\left(-\frac{1}{24}\right) \div \frac{1}{4}}} - \left(-\frac{8}{9}\right) \\ &= \underline{\underline{\left(-\frac{1}{6}\right) - \left(-\frac{8}{9}\right)}} \\ &= \frac{13}{18} \end{aligned}$$