

## EJERCICIOS RESUELTOS de operaciones combinadas de fracciones

a)  $\frac{1}{5} \cdot \left(\frac{1}{2} + \frac{1}{3}\right)$

- Resolvemos el paréntesis sumando las dos fracciones.

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

- Multiplicamos  $\frac{1}{5} \cdot \left(\frac{5}{6}\right) = \frac{1 \cdot \cancel{5}}{\cancel{5} \cdot 6} = \frac{1}{6}$

b)  $\frac{1}{10} : \left(\frac{2}{3} - \frac{3}{5}\right)$

- Restamos las fracciones del paréntesis  $\left(\frac{2}{3} - \frac{3}{5}\right) = \frac{2 \cdot 5}{15} - \frac{3 \cdot 3}{15} = \frac{10}{15} - \frac{9}{15} = \frac{1}{15}$

- Dividimos  $\frac{1}{10} : \frac{1}{15} = \frac{1 \cdot 15}{1 \cdot 10} = \frac{15}{10} = \frac{3}{2}$

c)  $\left(\frac{2}{3} - \frac{1}{2}\right) : \left(\frac{1}{3} - \frac{1}{5}\right)$

- Resolvemos los paréntesis  $\left(\frac{2}{3} - \frac{1}{2}\right) = \frac{2 \cdot 2}{6} - \frac{1 \cdot 3}{6} = \frac{4}{6} - \frac{3}{6} = \frac{1}{6}$

$$\left(\frac{1}{3} - \frac{1}{5}\right) = \frac{1 \cdot 5}{15} - \frac{1 \cdot 3}{15} = \frac{5}{15} - \frac{3}{15} = \frac{2}{15}$$

- Dividimos los resultados  $\frac{1}{6} : \frac{2}{15} = \frac{1 \cdot 15}{6 \cdot 2} = \frac{15}{12} = \frac{5}{4}$

d)  $\frac{7}{4} \div \left[\left(\frac{4}{3} - \frac{2}{8}\right) \cdot 3\right]$

$$\frac{7}{4} \div \left[\left(\frac{4}{3} - \frac{2}{8}\right) \cdot 3\right] = \frac{7}{4} \div \left[\left(\frac{32-6}{24}\right) \cdot 3\right] = \frac{7}{4} \div \left(\frac{26}{24} \cdot 3\right) = \frac{7 \cdot 24}{4 \cdot 78} = \frac{168}{312} = \frac{7}{13}$$

$$\frac{168}{312} = \frac{\cancel{2} \cdot \cancel{2} \cdot \cancel{2} \cdot 7}{\cancel{2} \cdot \cancel{2} \cdot \cancel{2} \cdot 13} = \frac{7}{13}$$

Realiza las siguientes operaciones.

$$\text{a) } \frac{5}{3} - \left( \frac{2}{5} \cdot \frac{7}{2} \right) - \frac{1}{3} \quad \text{c) } \left( \frac{2}{3} \cdot 5 - \frac{3}{4} \right) \cdot \frac{7}{2} \quad \text{e) } \left( \frac{5}{4} - \frac{3}{8} \cdot \frac{4}{9} \right) - \frac{4}{5} \cdot 2$$

$$\text{b) } \frac{5}{3} - \left( \frac{2}{5} \cdot \frac{7}{2} - \frac{1}{3} \right) \quad \text{d) } \left[ \left( -\frac{7}{3} \right) \cdot \frac{4}{5} - 2 \right] \cdot \frac{5}{3} \quad \text{f) } -3 \cdot \frac{4}{15} - \left( \frac{7}{8} \cdot 5 - 9 \right)$$

$$\text{a) } \frac{5}{3} - \left( \frac{2}{5} \cdot \frac{7}{2} \right) - \frac{1}{3} = \frac{5}{3} - \frac{7}{5} - \frac{1}{3} = \frac{25 - 21 - 5}{15} = -\frac{1}{15}$$

$$\text{b) } \frac{5}{3} - \left( \frac{2}{5} \cdot \frac{7}{2} - \frac{1}{3} \right) = \frac{5}{3} - \left( \frac{7}{5} - \frac{1}{3} \right) = \frac{5}{3} - \frac{21 - 5}{15} = \frac{5}{3} - \frac{16}{15} = \frac{3}{5}$$

$$\text{c) } \left( \frac{2}{3} \cdot 5 - \frac{3}{4} \right) \cdot \frac{7}{2} = \left( \frac{10}{3} - \frac{3}{4} \right) \cdot \frac{7}{2} = \frac{40 - 9}{12} \cdot \frac{7}{2} = \frac{217}{24}$$

$$\text{d) } \left[ \left( -\frac{7}{3} \right) \cdot \frac{4}{5} - 2 \right] \cdot \frac{5}{3} = \left[ -\frac{28}{15} - 2 \right] \cdot \frac{5}{3} = -\frac{58}{15} \cdot \frac{5}{3} = -\frac{58}{9}$$

$$\text{e) } \left( \frac{5}{4} - \frac{3}{8} \cdot \frac{4}{9} \right) - \frac{4}{5} \cdot 2 = \left( \frac{5}{4} - \frac{1}{6} \right) - \frac{8}{5} = \frac{13}{12} - \frac{8}{5} = -\frac{31}{60}$$

$$\text{f) } -3 \cdot \frac{4}{15} - \left( \frac{7}{8} \cdot 5 - 9 \right) = -\frac{4}{5} - \left( \frac{35}{8} - 9 \right) = -\frac{4}{5} - \left( -\frac{37}{8} \right) = \frac{153}{40}$$

$$\text{a) } \left( \frac{3}{2} - \frac{1}{5} + \frac{1}{10} \right) \cdot 5 - \frac{3}{4} \cdot \frac{6}{5} \quad \text{d) } 1 - \left[ \frac{3}{2} \cdot 5 - \frac{1}{2} \cdot \left( \frac{2}{3} + \frac{1}{9} \right) \right]$$

$$\text{b) } \left[ \left( \frac{3}{2} - \frac{1}{5} \right) \cdot 5 - \frac{1}{10} \right] \cdot \frac{3}{4} - \frac{6}{5} \quad \text{e) } \frac{8}{3} - \left[ 2 : \left( \frac{1}{3} - 1 \right) - \frac{5}{2} \right]$$

$$\text{c) } 1 - \frac{3}{2} \cdot 4 - \frac{1}{3} \cdot \left( \frac{1}{5} - \frac{1}{10} \right)$$

$$\text{a) } \left( \frac{3}{2} - \frac{1}{5} + \frac{1}{10} \right) \cdot 5 - \frac{3}{4} \cdot \frac{6}{5} = \frac{13}{10} \cdot 5 - \frac{9}{10} = \frac{14}{2} - \frac{9}{10} = \frac{61}{10}$$

$$\text{b) } \left[ \left( \frac{3}{2} - \frac{1}{5} \right) \cdot 5 - \frac{1}{10} \right] \cdot \frac{3}{4} - \frac{6}{5} = \left[ \frac{13}{10} \cdot 5 - \frac{1}{10} \right] \cdot \frac{3}{4} - \frac{6}{5} = \\ = \frac{32}{5} \cdot \frac{3}{4} - \frac{6}{5} = \frac{24}{5} - \frac{6}{5} = \frac{18}{5}$$

$$\text{c) } 1 - \frac{3}{2} \cdot 4 - \frac{1}{3} \cdot \left( \frac{1}{5} - \frac{1}{10} \right) = 1 - \frac{3}{2} \cdot 4 - \frac{1}{3} \cdot \frac{1}{10} = 1 - 6 - \frac{1}{30} = -\frac{151}{30}$$

$$\text{d) } 1 - \left[ \frac{3}{2} \cdot 5 - \frac{1}{2} \cdot \left( \frac{2}{3} + \frac{1}{9} \right) \right] = 1 - \left[ \frac{3}{2} \cdot 5 - \frac{1}{2} \cdot \frac{7}{9} \right] = 1 - \left( \frac{15}{2} - \frac{7}{18} \right) = \\ = 1 - \frac{64}{9} = -\frac{55}{9}$$

$$\text{e) } \frac{8}{3} - \left[ 2 : \left( \frac{1}{3} - 1 \right) - \frac{5}{2} \right] = \frac{8}{3} - \left[ 2 : \left( -\frac{2}{3} \right) - \frac{5}{2} \right] = \frac{8}{3} - \left( -3 - \frac{5}{2} \right) = \\ = \frac{8}{3} - \left( -\frac{11}{2} \right) = \frac{8}{3} + \frac{11}{2} = \frac{49}{6}$$