

## FICHA 6: Operaciones combinadas con fracciones (III)

1. Efectuar las siguientes **operaciones combinadas**, simplificando siempre en todos los pasos, y respetando la jerarquía:

a)  $\frac{2}{3} + \left[ 1 - \left( \frac{3}{4} - \frac{1}{6} \right) \right] =$  (Soluc: 13/12)

b)  $\frac{4}{5} - \frac{7}{3} \cdot \frac{3}{7} + \frac{1}{5} \left( 2 + \frac{1}{2} \right) - \frac{7}{3} + 4; \frac{6}{5} =$  (Soluc: 13/10)

c)  $\frac{2}{3} + \frac{5}{4} \left( \frac{3}{5} + \frac{4}{10} \right) - \frac{5}{4} + \left( \frac{3}{5} : 4 \right) + \frac{12}{5} =$  (Soluc: 193/60)

d)  $2 + \frac{1}{5} : \left( 2 + \frac{7}{3} - \frac{2}{4} + \frac{5}{3} \right) =$  (Soluc: 112/55)

e)  $\left( \frac{2}{7} - \frac{4}{5} + \frac{2}{8} \right) \cdot \frac{3}{2} - \frac{7}{5} : \frac{4}{7} =$  (Soluc: -797/280)

f)  $5 \cdot \frac{-33}{7} + 3 \cdot \frac{-7}{4} + 2 \cdot \frac{23}{56} =$  (Soluc: -28)

g)  $\frac{21}{5} + \frac{15}{4} \cdot \frac{16}{3} - \frac{15}{30} + \frac{12}{4} : \frac{5}{4} + 3 =$  (Soluc: 291/10)

h)  $\frac{2}{3} - \left[ \frac{3}{2} - \frac{1}{5} - \left( \frac{2}{5} - \frac{1}{3} \right) + \left( \frac{6}{5} - \frac{1}{2} \right) \right] - \frac{3}{4} + \left( \frac{1}{2} - \frac{1}{3} \right) =$  (Soluc: -37/20)

$$\text{i) } 2 - \left[ \frac{4}{3} - \left( \frac{1}{2} + \frac{2}{5} \right) - \frac{1}{3} \right] - \left( \frac{4}{3} + 2 \right) - \frac{1}{5} = \quad (\text{Soluc: } -49/30)$$

$$\text{j) } 2 + \left( \frac{5}{2} - 3 \right) - \left[ \frac{7}{10} - \left( \frac{2}{5} + \frac{1}{4} \right) \right] = \quad (\text{Soluc: } 29/20)$$

$$\text{k) } -\frac{3}{8} + \left( 4 - \frac{1}{2} \right) - \left[ \left( 2 - \frac{5}{4} \right) + \left( \frac{7}{2} - \frac{1}{8} \right) \right] = \quad (\text{Soluc: } -1)$$

$$\text{l) } \left( \frac{4}{3} - \frac{-1}{9} \right) + \left[ 2 - \left( -\frac{5}{4} + \frac{2}{3} \right) \right] - \frac{7}{2} = \quad (\text{Soluc: } 19/36)$$

$$\text{m) } \left[ \left( \frac{4}{6} + \frac{17}{2} \right) : \left( \frac{4}{3} - \frac{5}{12} \right) \right] \cdot \left( \frac{1}{6} + \frac{1}{15} \right) = \quad (\text{Soluc: } 7/3)$$

$$\text{n) } \left( \frac{1}{3} - \frac{4}{5} \right) \cdot \left[ \left( \frac{1}{3} - 1 \right) \cdot 3 - \frac{1+25}{3} \right] = \quad (\text{Soluc: } 259/225)$$

$$\text{o) } \frac{4}{5} : \left[ \frac{12}{16} \left( \frac{1}{6} + \frac{2}{3} \right) - \frac{3}{8} \right] - 3 \left[ \frac{1}{6} : \left( 1 - \frac{2}{5} \right) \right] = \quad (\text{Soluc: } 71/30)$$

$$\text{p) } \frac{3}{2} - \frac{1}{2} \cdot \frac{4}{3} : \left( \frac{4}{3} - \frac{2}{3} \cdot \frac{15}{8} + 1 \right) = \quad (\text{Soluc: } 23/26)$$

$$\text{q) } \frac{\frac{1}{5} - 2}{\frac{6}{5} - 3} = \quad (\text{Soluc: } 3)$$

## FICHA 7: Fracciones de términos racionales (I)

1. Operar las siguientes fracciones de términos racionales, simplificando en todo momento los pasos intermedios y el resultado (véase el primer ejemplo):

$$\text{a) } \frac{\frac{3}{5} + \frac{1}{2}}{\frac{2}{3} - \frac{1}{2}} = \frac{\frac{10}{10}}{\frac{1}{6}} = \frac{11 \cdot 6}{10} = \frac{11 \cdot 2 \cdot 3}{2 \cdot 5} = \boxed{\frac{33}{5}}$$

$$\text{b) } \frac{\frac{3}{4} + \frac{1}{2}}{\frac{3}{5} - \frac{1}{3}} =$$

(Soluc: 25/4)

$$\text{c) } \frac{\frac{5}{12} - \frac{1}{3}}{\frac{1}{2} : \frac{5}{6}} =$$

(Soluc: 5/36)

$$\text{d) } \frac{\frac{2}{5} - \frac{1}{2} + \frac{1}{3}}{\frac{2}{3} \cdot \frac{6}{5}} =$$

(Soluc: 7/24)

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

(Soluc: 1/16)

$$\text{f) } \frac{\frac{1}{2} + \frac{3}{5} : \frac{2}{3} - 4}{\left(3 + \frac{2}{5}\right) \cdot \frac{1}{3}} =$$

(Soluc: -39/17)

$$\text{g) } \frac{\left(2 + \frac{1}{3}\right) \cdot \left(4 - \frac{2}{3}\right)}{1 + \frac{5}{4} : \frac{3}{12}} =$$

(Soluc: 35/27)

$$\text{h) } \frac{\frac{1}{5} + \frac{3}{5} \cdot \frac{25}{6} - 2 : \frac{4}{9}}{\frac{4}{9} \left(\frac{1}{5} - 2\right) - \frac{1}{3}} =$$

(Soluc: 27/17)

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

(Soluc: -73/98)

$$\text{j) } \frac{\frac{1}{2} + \frac{1}{7} + \frac{1}{14} + \frac{1}{112} + \frac{1}{224}}{\frac{1}{2} + \frac{1}{8} + \frac{1}{16} + \frac{1}{32} + \frac{1}{112}} =$$

(Soluc: 1)

$$\text{k) } \frac{\left(2 - \frac{1}{3} + \frac{2}{5}\right) : \frac{31}{5}}{\frac{2}{3} + \frac{3}{2} : \frac{4}{9} : \left(-\frac{1}{2}\right)} =$$

(Soluc: -1/2)

$$\text{l) } \frac{\frac{3}{2} \left(\frac{2}{5} + 3 : \frac{6}{5}\right) - \frac{7}{20}}{\left(3 + \frac{3}{2} \cdot \frac{4}{10}\right) : \frac{6}{5} - \frac{4}{5}} =$$

(Soluc: 20/11)

$$\text{m) } \frac{\left(\frac{4}{3} - \frac{1}{6} : \frac{7}{4}\right) \cdot 5}{\frac{2}{5} \cdot \left(\frac{7}{3} - \frac{9}{2} : \frac{4}{7}\right)} =$$

(Soluc: -2600/931)

$$\text{n) } \frac{\frac{1}{3} : \left(\frac{7}{4} - \frac{5}{3}\right) : 3 + \frac{1}{8}}{\left(\frac{1}{3} : \frac{7}{4} - \frac{1}{3}\right) : \frac{1}{3} + \frac{1}{8}} =$$

(Soluc: -245/51)

$$\text{o) } \frac{\frac{20}{7} \cdot \left(\frac{1}{5} - \frac{2}{3}\right)}{-7 : \left(\frac{3}{4} - \frac{2}{5}\right)} =$$

(Soluc: 1/15)