

EJERCICIOS REPASO DE FRACCIONES (3ºESO)

ALUMNO/A: SOLUCIÓN

FECHA DE ENTREGA: _____ FECHA DE DEVOLUCIÓN AL PROFESOR: _____

1. Ordenar de menor a mayor:

$$\frac{5}{12}, \frac{2}{15}, \frac{5}{4}, \frac{7}{5}$$

$$\frac{25}{60}, \frac{8}{60}, \frac{75}{60}, \frac{84}{60}$$

$$\frac{2}{15} < \frac{5}{12} < \frac{5}{4} < \frac{7}{5}$$

2. Pasar a fracción:

a) 0.0051, b) 0.051, c) 0.051,

d) 0.037, e) 0.037, f) 0.037, g) 1.0001, h) 1.0001, i) 1.0001

3. Realizar las siguientes operaciones:

a) $5.\bar{6} + 0.1 = \frac{51}{9} + \frac{1}{10} = \frac{510+9}{90} = \frac{519}{90} = \frac{173}{30}$

b) $0.1 + 0.\bar{1} - 0.0\bar{1} = \frac{1}{10} + \frac{1}{9} - \frac{1}{90} = \frac{9+10-1}{90} = \frac{18}{90} = \frac{1}{5}$

c) $2.\bar{3} : 1.5 = \frac{21}{9} : \frac{3}{2} = \frac{7}{3} : \frac{3}{2} = \frac{14}{9}$

4. Resuelve:

a) $\left(3 + \frac{1}{4}\right) - \left(2 + \frac{1}{6}\right) = \frac{13}{4} - \frac{13}{6} = \frac{39}{12} - \frac{26}{12} = \frac{13}{12}$

b) $\frac{1}{2} : \left(\frac{1}{4} + \frac{1}{3}\right) = \frac{1}{2} : \frac{7}{12} = \frac{12}{14} = \frac{6}{7}$

c) $\left(\frac{5}{3} - 1\right) \cdot \left(\frac{7}{2} - 2\right) = \frac{2}{3} \cdot \frac{3}{2} = 1$

d) $\left(\frac{3}{4} + \frac{1}{2}\right) : \left(\frac{5}{3} + \frac{1}{6}\right) = \frac{5}{4} : \frac{11}{6} = \frac{30}{44} = \frac{15}{22}$

(*)

a) $\frac{51}{10000}$

b) $\frac{51}{999} = \frac{17}{333}$

c) $\frac{46}{900} = \frac{23}{450}$

d) $\frac{37}{1000}$

e) $\frac{37}{999} = \frac{1}{27}$

f) $\frac{34}{900} = \frac{17}{450}$

g) $\frac{10000}{9999}$

h) $\frac{10001}{10000}$

i) $\frac{9991}{9990}$

5. Opera:

$$\frac{\frac{3}{2} + \frac{1}{4}}{\frac{5}{6} - \frac{1}{3}} = \frac{\frac{7}{4}}{\frac{3}{6}} = \frac{7}{4} : \frac{1}{2} = \frac{14}{4} = \boxed{\frac{7}{2}}$$

a)

$$\frac{-1 + \frac{3}{4} - \frac{1}{3}}{2 - \frac{1}{4}} = \frac{\frac{-12 + 9 - 4}{12}}{\frac{7}{4}} = \frac{-7}{12} : \frac{7}{4} = \frac{-28}{84} = \boxed{\frac{-1}{3}}$$

b)

$$1 - \frac{1}{1 - \frac{1}{1 - \frac{1}{2}}} = 1 - \frac{1}{1 - \frac{1}{\frac{1}{2}}} = 1 - \frac{1}{1 - 2} = 1 - \frac{1}{-1} = 1 - (-1) = \boxed{2}$$

c)

6. Realiza las siguientes operaciones con potencias:

$$\left(\frac{4}{9}\right)^{-2} : \left(\frac{27}{8}\right)^{-3} = \left(\frac{9}{4}\right)^2 : \left(\frac{8}{27}\right)^3 = \left(\frac{3^2}{2^2}\right)^2 : \left(\frac{2^3}{3^3}\right)^3 = \frac{3^4}{2^4} : \frac{2^9}{3^9} = \frac{3^4 \cdot 3^9}{2^4 \cdot 2^9} = \frac{3^{13}}{2^{13}} = \boxed{\left(\frac{3}{2}\right)^{13}} = \frac{1594323}{8192}$$

$$\frac{\left(\frac{2}{3}\right)^5 \left(\frac{2}{3}\right)^0 \left(\frac{2}{3}\right)^{-3} \left(\frac{81}{16}\right)^{-2}}{\left(\frac{3}{2}\right)^{-5} \left(\frac{2}{3}\right) \left[\left(\frac{2}{3}\right)^5\right]^2 \left(\frac{8}{27}\right)^3} = \frac{\left(\frac{2}{3}\right)^5 \cdot \left(\frac{2}{3}\right)^{-3} \cdot \left(\frac{3^4}{2^4}\right)^{-2}}{\left(\frac{2}{3}\right)^5 \cdot \left(\frac{2}{3}\right) \cdot \left(\frac{2}{3}\right)^{10} \cdot \left(\frac{2^3}{3^3}\right)^3} = \frac{\left(\frac{2}{3}\right)^2 \cdot \left(\frac{2}{3}\right)^8}{\left(\frac{2}{3}\right)^{25}} = \left(\frac{2}{3}\right)^{10} : \left(\frac{2}{3}\right)^{25} = \left(\frac{2}{3}\right)^{-15} = \boxed{\left(\frac{3}{2}\right)^{15}} = \frac{14348907}{32768}$$

$$\frac{\left(2 - \frac{1}{5}\right)^2}{\left(3 - \frac{2}{9}\right)^{-1}} : \frac{\left(\frac{6}{7} \cdot \frac{5}{4} - \frac{2}{7} : \frac{1}{2}\right)^3}{\left(\frac{1}{2} - \frac{1}{3} \cdot \frac{1}{4} : \frac{1}{5}\right)} - 5\frac{1}{7} = \frac{\left(\frac{9}{5}\right)^2}{\left(\frac{25}{9}\right)^{-1}} : \frac{\left(\frac{15}{14} - \frac{4}{7}\right)^3}{\left(\frac{1}{2} - \frac{1}{12} : \frac{1}{5}\right)} - \frac{36}{7} = \frac{\frac{9^2}{5^2}}{\frac{9}{25}} : \frac{\left(\frac{1}{2}\right)^3}{\left(\frac{1}{2} - \frac{5}{12}\right)} - \frac{36}{7} = 9 : \frac{\left(\frac{1}{2}\right)^3}{\left(\frac{1}{12}\right)} - \frac{36}{7} = 9 : \left(\frac{1}{8} : \frac{1}{12}\right) - \frac{36}{7} = 9 : \frac{12}{8} - \frac{36}{7} = 9 : \frac{6}{4} - \frac{36}{7} = \frac{36}{6} - \frac{36}{7} = 6 - \frac{36}{7} = \frac{42 - 36}{7} = \boxed{\frac{6}{7}}$$

7. Resuelve:

$$\frac{2}{3} : \left[5 : \left(\frac{2}{4} + 1 \right) - 3 \left(\frac{1}{2} - \frac{1}{4} \right) \right] = \frac{2}{3} : \left[5 : \frac{6}{4} - 3 \cdot \frac{1}{4} \right] = \frac{2}{3} : \left(5 : \frac{3}{2} - \frac{3}{4} \right) =$$

$$= \frac{2}{3} : \left(\frac{10}{3} - \frac{3}{4} \right) = \frac{2}{3} : \frac{31}{12} = \frac{24}{93} = \boxed{\frac{8}{31}}$$

$$\left[\left(\frac{2}{3} - \frac{1}{9} \right) + 13 \left(\frac{2}{3} - 1 \right)^2 \right] : \left[\left(\frac{1}{2} - 1 \right) : 2 \frac{1}{2} \right] = \left[\frac{5}{9} + 13 \cdot \left(-\frac{1}{3} \right)^2 \right] : \left[\left(-\frac{1}{2} \right) : \frac{5}{2} \right] =$$

$$= \left[\frac{5}{9} + 13 \cdot \frac{1}{9} \right] : \left(-\frac{1}{5} \right) = \left(\frac{5}{9} + \frac{13}{9} \right) : \left(-\frac{1}{5} \right) = \frac{18}{9} : \left(-\frac{1}{5} \right) = 2 : \left(-\frac{1}{5} \right) = \boxed{-10}$$

$$\left[\left(2 - 1 \frac{3}{5} \right)^2 + \left(\frac{5}{8} - \frac{3}{4} \right) - \left(\frac{6}{5} \cdot \frac{1}{3} \right)^4 \cdot \left(7 \frac{1}{2} \right)^3 \right] : \left(5 - \frac{6}{5} \right) =$$

$$= \left[\left(2 - \frac{8}{5} \right)^2 + \left(-\frac{1}{8} \right) - \left(\frac{2}{5} \right)^4 \cdot \left(\frac{15}{2} \right)^3 \right] : \left(\frac{19}{5} \right) = \left[\left(\frac{2}{5} \right)^2 - \frac{1}{8} - \frac{2^4 \cdot 3^3 \cdot 5^3}{5^4 \cdot 2^3} \right] : \left(\frac{19}{5} \right) =$$

$$= \left(\frac{4}{25} - \frac{1}{8} - \frac{27 \cdot 2}{5} \right) : \left(\frac{19}{5} \right) = \left(\frac{4}{25} - \frac{1}{8} - \frac{54}{5} \right) : \left(\frac{19}{5} \right) =$$

$$= \left(\frac{32}{200} - \frac{25}{200} - \frac{2160}{200} \right) : \frac{19}{5} = \frac{-2153}{200} : \frac{19}{5} = \frac{-10765}{3800} = \boxed{\frac{-2153}{760}}$$