

## EXAMEN DE MATEMÁTICAS 1ºESO

ALUMNO/A: SOLUCIÓN

① Calcula:

$$(0,5p) \quad a) \quad 2 - 5 \cdot (-3) + (-4) \cdot (-6) = 2 - (-15) + 24 = 2 + 15 + 24 = 41$$

$$(0,5p) \quad b) \quad [(-7) \cdot (+3) - (-1)] : (-4) + 2 = (-21 + 1) : (-4) + 2 = -20 : (-4) + 2 = 5 + 2 = 7$$

$$(0,5p) \quad c) \quad [(-3) + (-6) : (-2) - 9] : (+3) + (-4) = (-3 + 3 - 9) : 3 - 4 = -3 - 4 = -7$$

$$(0,5p) \quad d) \quad [10 - (+2)] : (-4) + (-6) \cdot (-3) + 7 = (10 - 2) : (-4) + 18 + 7 = 8 : (-4) + 18 + 7 = -2 + 18 + 7 = 25 - 2 = 23$$

$$(0,5p) \quad e) \quad [-2 - 3 + (-4) - 5] : (2 \cdot 7) - (4 \cdot (-3) - (-6) \cdot 2) = (-2 - 3 - 4 - 5) : 14 - (-12 - (-12)) = -14 : 14 - (-12 + 12) = -1 - 0 = -1$$

$$(0,5p) \quad f) \quad (3 + (-2) \cdot 2) \cdot (-5) - 40 : [-7 - (-2)] = (3 + (-4)) \cdot (-5) - 40 : (-7 + 2) = -1 \cdot (-5) - 40 : (-5) = 5 - (-8) = 5 + 8 = 13$$

② En un congreso internacional,  $\frac{3}{7}$  de los delegados son europeos y  $\frac{1}{3}$  son asiáticos; el resto son americanos.

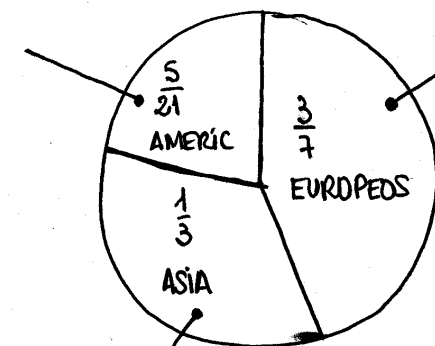
(0,75p) a) ¿Qué fracción de los delegados son americanos?

$$1 - \left( \frac{3}{7} + \frac{1}{3} \right) = 1 - \left( \frac{9+7}{21} \right) = 1 - \frac{16}{21} = \frac{21-16}{21} = \frac{5}{21} \text{ de americanos}$$

(0,75p) b) Si el total de asistentes es de 252, ¿cuántos delegados hay de cada uno de los tres continentes?

$$\frac{5}{21} \cdot 252 = \frac{1260}{21} = 60 \text{ AMERICANOS} \quad \text{TOTAL: 252}$$

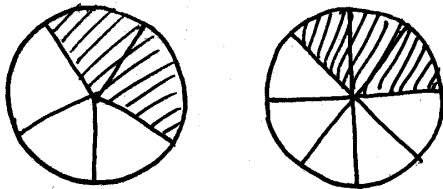
$$\frac{3}{7} \cdot 252 = \frac{756}{7} = 108 \text{ EUROPEOS}$$



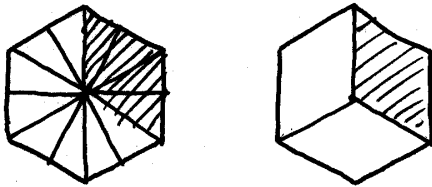
$$\frac{1}{3} \cdot 252 = \frac{252}{3} = 84 \text{ ASIÁTICOS}$$

③ Coloca el signo  $>$ ,  $<$  ó  $=$  entre los siguientes pares de fracciones, pasando previamente a denominador común y realiza una representación gráfica de las mismas:

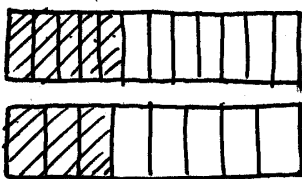
(0,5p) a)  $\frac{2}{5} > \frac{3}{8}$  porque:  $\left. \begin{array}{l} \frac{2}{5} = \frac{16}{40} \\ \frac{3}{8} = \frac{15}{40} \end{array} \right\} \frac{2}{5} > \frac{3}{8}$



(0,5p) b)  $\frac{4}{12} = \frac{1}{3}$  porque:  $\left. \begin{array}{l} \frac{1}{3} = \frac{4}{12} \\ \frac{4}{12} \end{array} \right\} \frac{1}{3} = \frac{4}{12}$



(0,5p) c)  $\frac{5}{12} > \frac{3}{8}$  porque:  $\left. \begin{array}{l} \frac{5}{12} = \frac{10}{24} \\ \frac{3}{8} = \frac{9}{24} \end{array} \right\} \frac{5}{12} > \frac{3}{8}$



④ Calcula y simplifica todo lo que se pueda:

$$(0,5p) \text{ a) } \frac{4}{3} + \frac{2}{12} + \frac{1}{15} = \frac{80+10+4}{60} = \frac{94}{60} = \frac{47}{30}$$

$$\text{mcm}(3,12,15) = 2^2 \cdot 3 \cdot 5 = 60$$

$$\left. \begin{array}{l} 3=3 \\ 12=2^2 \cdot 3 \\ 15=3 \cdot 5 \end{array} \right\}$$

$$(0,5p) \text{ b) } \frac{1}{60} + \frac{4}{5} - \frac{5}{12} + 3 = \frac{1+48-25+180}{60} = \frac{229-25}{60} = \frac{204}{60} = \frac{102}{30} = \frac{51}{15} = \frac{17}{5}$$

$$\text{mcm}(60,5,12) = 60$$

$$\left. \begin{array}{l} 60=2^2 \cdot 3 \cdot 5 \\ 12=2^2 \cdot 3 \\ 5=5 \end{array} \right\}$$

$$(0,75p) \text{ c) } 2 : \left( \frac{1}{2} - \frac{1}{4} \right) = 2 : \left( \frac{2-1}{4} \right) = 2 : \frac{1}{4} = 2 \cdot 4 = 8$$

$$(0,75p) \text{ d) } \frac{2}{3} \cdot \left( \frac{1}{2} + \frac{2}{3} \right) - 2 \cdot \left( \frac{2}{3} - \frac{4}{9} \right) = \frac{2}{3} \cdot \left( \frac{3+4}{6} \right) - 2 \cdot \left( \frac{6-4}{9} \right) = \\ = \frac{2}{3} \cdot \frac{7}{6} - 2 \cdot \frac{2}{9} = \frac{14}{18} - \frac{4}{9} = \frac{7}{9} - \frac{4}{9} = \frac{3}{9} = \frac{1}{3}$$

$$\begin{aligned} (0,75p) \text{ e) } \frac{3}{4} \cdot \left[ \frac{6}{5} - \frac{2}{7} \cdot \left( 1 + \frac{2}{5} \right) \right] &= \frac{3}{4} \cdot \left[ \frac{6}{5} - \frac{2}{7} \cdot \left( \frac{5+2}{5} \right) \right] = \frac{3}{4} \cdot \left( \frac{6}{5} - \frac{2}{7} \cdot \frac{7}{5} \right) = \\ &= \frac{3}{4} \cdot \left( \frac{6}{5} - \frac{14}{35} \right) = \frac{3}{4} \cdot \left( \frac{6}{5} - \frac{2}{5} \right) = \frac{3}{4} \cdot \frac{4}{5} = \frac{12}{20} = \frac{6}{10} = \frac{3}{5} \end{aligned}$$

$$\begin{aligned} (0,75p) \text{ #) } \frac{2}{5} + \frac{3}{4} \cdot \left[ 1 - \frac{2}{3} \cdot \left( 2 - \frac{1}{5} \right) \right] &= \frac{2}{5} + \frac{3}{4} \cdot \left[ 1 - \frac{2}{3} \cdot \left( \frac{10-1}{5} \right) \right] = \\ &= \frac{2}{5} + \frac{3}{4} \cdot \left[ 1 - \frac{2}{3} \cdot \frac{9}{5} \right] = \frac{2}{5} + \frac{3}{4} \cdot \left( 1 - \frac{18}{15} \right) = \frac{2}{5} + \frac{3}{4} \cdot \left( 1 - \frac{6}{5} \right) = \\ &= \frac{2}{5} + \frac{3}{4} \cdot \left( \frac{5-6}{5} \right) = \frac{2}{5} + \frac{3}{4} \cdot \left( \frac{-1}{5} \right) = \frac{2}{5} - \frac{3}{20} = \frac{8-3}{20} = \frac{5}{20} = \frac{1}{4} \end{aligned}$$