

	Nombre:			1º TRIMESTRE	Nota
	Curso:	2º ESO D	Control Operaciones II		
	Fecha:	24 de octubre de 2025	Naturales, enteros y fracciones		

I.E.S. ABYLA (Ceuta)

1.- Realiza paso a paso las siguientes operaciones en un folio e indica aquí sus soluciones:

a) $5 - 8 + 11 - 9 + 4 + 7 - 5 - 3 =$

b) $4 \cdot 5 - 2 \cdot 8 + 3 \cdot 9 - 6 \cdot 7 : 14 =$

c) $[4 + 5 \cdot (8 - 9)] - [7 - 4 \cdot (5 - 7)] =$

d) $-3 - (-4) \cdot [\sqrt{64} - 5 \cdot (-2)] =$

e) $[(-5) - (-3)] - [-(-4) - (-7)] =$

f) $\frac{12}{15} - 3 + \frac{40}{12} - \frac{10}{8} =$

g) $\frac{5}{2} + 2 \cdot \left(7 - \frac{1}{3}\right) - 8 =$

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

i) $\left(1 + \frac{1}{2} + \frac{1}{8}\right) \cdot \left(2 - \frac{10}{13}\right) =$

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

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

Recuerda que la potencia de una fracción se calcula elevando tanto el numerador como el denominador a dicho exponente:

$$\left(\frac{a}{b}\right)^c = \frac{a^c}{b^c}$$

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1.- Realiza paso a paso las siguientes operaciones combinadas.

$$a) \quad 5 - 8 + 11 - 9 + 4 + 7 - 5 - 3 = (5 + 11 + 4 + 7) - (8 + 9 + 5 + 3) = 27 - 25 = 2$$

$$b) \quad 4 \cdot 5 - 2 \cdot 8 + 3 \cdot 9 - 6 \cdot 7 : 14 = 20 - 16 + 27 - 3 = 28$$

$$c) \quad [4 + 5 \cdot (8 - 9)] - [7 - 4 \cdot (5 - 7)] = [4 + 5 \cdot (-1)] - [7 - 4 \cdot (-2)] = (4 - 5) - (7 + 8) = -1 - 15 = -16$$

$$d) \quad -3 - (-4) \cdot [\sqrt{64} - 5 \cdot (-2)] = -3 - (-4) \cdot [8 + 10] = -3 - (-4) \cdot [18] = -3 + 72 = 69$$

$$e) \quad [(-5) - (-3)] - [-(-4) - (-7)] = [-5 + 3] - [4 + 7] = -2 - 11 = -13$$

$$f) \quad \frac{12}{15} - 3 + \frac{40}{12} - \frac{10}{8} = \frac{4}{5} - 3 + \frac{10}{3} - \frac{5}{4} \quad \begin{array}{l} \text{Simplificamos} \\ \text{antes del mcm} \end{array} \quad \begin{array}{l} \text{Reducimos a} \\ \text{común denominador} \end{array} = \frac{4 \cdot 12}{60} - \frac{3 \cdot 60}{60} + \frac{10 \cdot 20}{60} - \frac{5 \cdot 15}{60} =$$

$$= \frac{48}{60} - \frac{180}{60} + \frac{200}{60} - \frac{75}{60} = \frac{-7}{60}$$

$$g) \quad \frac{5}{2} + 2 \cdot \left(7 - \frac{1}{3} \right) - 8 = \frac{5}{2} + 2 \cdot \left(\frac{7 \cdot 3}{3} - \frac{1}{3} \right) - 8 = \frac{5}{2} + 2 \cdot \left(\frac{21}{3} - \frac{1}{3} \right) - 8 = \frac{5}{2} + 2 \cdot \left(\frac{20}{3} \right) - 8 =$$

$$= \frac{5}{2} + \frac{40}{3} - 8 = \frac{3 \cdot 5}{6} + \frac{2 \cdot 40}{6} - \frac{6 \cdot 8}{6} = \frac{15}{6} + \frac{80}{6} - \frac{48}{6} = \frac{47}{6}$$

$$h) \quad 3 + \frac{1}{4} \cdot \left[\frac{1}{2} + 3 \cdot \left(4 - \frac{2}{3} \right) \right] = 3 + \frac{1}{4} \cdot \left[\frac{1}{2} + 3 \cdot \left(\frac{4 \cdot 3}{3} - \frac{2}{3} \right) \right] = 3 + \frac{1}{4} \cdot \left[\frac{1}{2} + 3 \cdot \left(\frac{12}{3} - \frac{2}{3} \right) \right] =$$

$$= 3 + \frac{1}{4} \cdot \left[\frac{1}{2} + 3 \cdot \left(\frac{10}{3} \right) \right] = 3 + \frac{1}{4} \cdot \left[\frac{1}{2} + 10 \right] = 3 + \frac{1}{4} \cdot \left[\frac{1}{2} + \frac{20}{2} \right] = 3 + \frac{1}{4} \cdot \left[\frac{21}{2} \right] = 3 + \frac{21}{8} =$$

$$= \frac{24}{8} + \frac{21}{8} = \frac{45}{8}$$

$$i) \quad \left(1 + \frac{1}{2} + \frac{1}{8} \right) \cdot \left(2 - \frac{10}{13} \right) = \left(\frac{8}{8} + \frac{4}{8} + \frac{1}{8} \right) \cdot \left(\frac{26}{13} - \frac{10}{13} \right) = \frac{13}{8} \cdot \frac{16}{13} = \frac{13}{8} \cdot \frac{16}{13} = \frac{16}{8} = 2$$

$$\begin{aligned}
 j) \quad & \left[\left(\frac{2}{3} - \frac{1}{9} \right) + 13 \left(\frac{2}{3} - 1 \right)^2 \right] : \left(-\frac{2}{3} \right) = \left[\left(\frac{6}{9} - \frac{1}{9} \right) + 13 \left(\frac{2}{3} - \frac{3}{3} \right)^2 \right] : \left(-\frac{2}{3} \right) = \left[\frac{5}{9} + 13 \left(-\frac{1}{3} \right)^2 \right] : \left(-\frac{2}{3} \right) = \\
 & = \left[\frac{5}{9} + 13 \left(\frac{1}{9} \right) \right] : \left(-\frac{2}{3} \right) = \left(\frac{5}{9} + \frac{13}{9} \right) : \left(-\frac{2}{3} \right) = \frac{18}{9} : \left(-\frac{2}{3} \right) = 2 : \left(-\frac{2}{3} \right) = -\frac{6}{2} = -3
 \end{aligned}$$

$$\begin{aligned}
 +) \quad & \frac{2}{3} \left(\frac{3}{4} - \frac{1}{2} \right)^2 - \frac{1}{6} \left(\frac{5}{6} - \frac{1}{3} \right)^2 = \frac{2}{3} \left(\frac{3}{4} - \frac{2}{4} \right)^2 - \frac{1}{6} \left(\frac{5}{6} - \frac{2}{6} \right)^2 = \frac{2}{3} \left(\frac{1}{4} \right)^2 - \frac{1}{6} \left(\frac{3}{6} \right)^2 = \frac{2}{3} \left(\frac{1}{4} \right)^2 - \frac{1}{6} \left(\frac{1}{2} \right)^2 = \\
 & = \frac{2}{3} \left(\frac{1}{16} \right) - \frac{1}{6} \left(\frac{1}{4} \right) = \frac{2}{48} - \frac{1}{24} = \frac{1}{24} - \frac{1}{24} = 0
 \end{aligned}$$