

**Ejercicio nº 1.-**

**Calcula:**

a)  $-9 - (-10 + 4 - (-2) + (-3))$

b)  $-5 \times (-4)^2 - (-3) : 3 + (-8)$

c)  $-5 + 2 [-7 + (-4) \times (-2) - 28 : 4]$

d)  $(-24) : [7 \cdot (6 - 7 + 12) - (-5) \cdot (-7 + 4 - 10)]$

Solución:

a)  $-9 - (-10 + 4 - (-2) + (-3)) = -9 - (-10 + 4 + 2 - 3) = -9 - (-7) = -9 + 7 = -2$

b)  $-5 \times (-4)^2 - (-3) : 3 + (-8) = -80 + 1 - 8 = -87$

c)  $-5 + 2 [-7 + (-4) \times (-2) - 28 : 4] = -5 + 2 [-7 + 8 - 7] = -5 + 2 \times (-6) = -5 - 12 = -17$

d)  $(-24) : [7 \cdot (6 - 7 + 12) - (-5) \cdot (-7 + 4 - 10)] =$

$= (-24) : [7 \cdot 11 + 5 \cdot (-13)] = (-24) : [77 - 65] = (-24) : 12 = -2$

**Ejercicio nº 2.-**

Calcula y simplifica:

a)  $\frac{1}{5} - \frac{4}{3} \cdot \frac{1}{2} - \frac{3}{5} : 3$

b)  $\frac{4}{5} - \frac{2}{5} \left[ \frac{1}{3} - \frac{2}{5} \cdot \frac{1}{2} + 1 \right]$

Solución:

a)  $\frac{1}{5} - \frac{4}{3} \cdot \frac{1}{2} - \frac{3}{5} : 3 = \frac{1}{5} - \frac{4}{6} - \frac{3}{15} = \frac{1}{5} - \frac{2}{3} - \frac{1}{5} = \frac{-2}{3}$

b)  $\frac{4}{5} - \frac{2}{5} \left[ \frac{1}{3} - \frac{2}{5} \cdot \frac{1}{2} + 1 \right] = \frac{4}{5} - \frac{2}{5} \left[ \frac{1}{3} - \frac{1}{5} + 1 \right] = \frac{4}{5} - \frac{2}{5} \left[ \frac{5}{15} - \frac{3}{15} + \frac{15}{15} \right] =$

$= \frac{4}{5} - \frac{2}{5} \cdot \frac{17}{15} = \frac{4}{5} - \frac{34}{75} = \frac{60}{75} - \frac{34}{75} = \frac{26}{75}$

**Ejercicio nº 3.-**

a) Calcula:

$$\left(\frac{1}{6}\right)^{-2}, \left(-\frac{3}{2}\right)^3, \frac{3^{-2}}{2^{-1}}$$

b) Simplifica:

$$\frac{3^4 \cdot 3 \cdot 9^2}{3^0 \cdot 3 \cdot 27}$$

c) Simplifica:

$$\frac{6^3 \cdot 3^{-2}}{3^6 \cdot 2^{-2}}$$

Solución:

$$\text{a) } \left(\frac{1}{6}\right)^{-2} = \left(\frac{6}{1}\right)^2 = 36; \quad \left(-\frac{3}{2}\right)^3 = -\frac{27}{8}; \quad \frac{3^{-2}}{2^{-1}} = \frac{\frac{1}{3^2}}{\frac{1}{2}} = \frac{1}{9} \cdot \frac{1}{2} = \frac{2}{9}$$

$$\text{b) } \frac{3^4 \cdot 3 \cdot 9^2}{3^0 \cdot 3 \cdot 27} = \frac{3^4 \cdot 3 \cdot 3^4}{1 \cdot 3 \cdot 3^3} = \frac{3^9}{3^4} = 3^5 = 243$$

$$\text{c) } \frac{6^3 \cdot 3^{-2}}{3^6 \cdot 2^{-2}} = \frac{6^3 \cdot 2^2}{3^6 \cdot 3^2} = \frac{3^3 \cdot 2^3 \cdot 2^2}{3^8} = \frac{3^3 \cdot 2^5}{3^8} = \frac{2^5}{3^5} = \left(\frac{2}{3}\right)^5$$

#### **Ejercicio nº 4.-**

**Calcula:**

$$\text{a) } -5 \cdot (6 - 4)^{-3} + 12 \cdot 4^{-1}$$

$$\text{b) } \left(\frac{5}{3} - \frac{3}{2}\right)^3 : \left(\frac{7}{8} - \frac{3}{4}\right)^2$$

**Solución:**

$$\text{a) } -5 \cdot (6 - 4)^{-3} + 12 \cdot 4^{-1} = -5 \cdot 2^{-3} + \frac{12}{4} = \frac{-5}{2^3} + 3 = \frac{-5}{8} + 3 = \frac{-5}{8} + \frac{24}{8} = \frac{19}{8}$$

$$\text{b) } \left(\frac{5}{3} - \frac{3}{2}\right)^3 : \left(\frac{7}{8} - \frac{3}{4}\right)^2 = \left(\frac{10-9}{6}\right)^3 : \left(\frac{7-6}{8}\right)^2 = \left(\frac{1}{6}\right)^3 : \left(\frac{1}{8}\right)^2 =$$

$$= \frac{1}{216} : \frac{1}{64} = \frac{64}{216} = \frac{8}{27}$$