

ENTEROS Y RACIONALES

1. Realiza las siguientes operaciones:

- a) $2 \cdot (3-9) - 6 \cdot (5-6) - 4 \cdot (8-9) =$
- b) $-5 \cdot (-3-2) + 2 \cdot (12-13) - (-9) =$
- c) $2 \cdot (3-4+2) - (-15) + (13-8) \cdot 5 =$
- d) $(-2-4) \cdot (-1+3) - (-15-2) : (-9+8) =$
- e) $4-3 \cdot [2+4 \cdot (1-7)] + 6 - (-5) =$
- f) $(-13) \cdot (-2+3) - (-8) + 15 : (-3-2) =$
- g) $18-3 \cdot (12-15) + 3 \cdot (6-4) \cdot (5-9) =$
- h) $(8-4) \cdot (5-8) : (6-9) - (-2-8) \cdot (10-4) =$
- i) $26-5 \cdot [10+4 \cdot (5-6)] =$
- j) $(-9) \cdot (8-3) - 6 \cdot [2-(6-8) \cdot 4] =$
- k) $2 \cdot [-22+5 \cdot (4-2 \cdot 5)] + 18 =$
- l) $[6+2 \cdot (3-25:5)] - [4-3 \cdot (8-6)] =$
- m) $[3+5 \cdot (8-9)] - (-6) - [7-4 \cdot (15:3-3)] =$
- n) $2 \cdot (-3) \cdot 4 \cdot (-5) : (-6) + 2^2 =$
- o) $2^2 \cdot [(-3)^2 - (6-8)^3] + (-4) : (-2)^1 =$

2. Realiza las siguientes operaciones:

- a) $-5+4 \cdot (-2+1)^3 - 6 \cdot (5-6)^4 - (-4) \cdot (12-9)^2 =$
- b) $(3-4)^4 - (-2)^3 + 18 : (-1-8) - (-4+2)^2 =$
- c) $12-8 \cdot [-2-3+(-2)^2-3^2] - (5-6)^5 - \sqrt{9} \cdot (8-9) =$
- d) $12 : (-6) + (-8-7) \cdot (-3-2+6) - (-3) \cdot (-4) =$
- e) $(-40) : (-2)^3 + \sqrt{36} \cdot (6-2 \cdot 5) + (-15) : (-3) =$
- f) $(-5)^3 : [1+(-2)^3 \cdot (-3)] - 4 \cdot (-10)^2 =$
- g) $3 \cdot [5-3 \cdot (6-2 \cdot 5+24:2) + (-3)^3] - (-3-1)^1 =$
- h) $(-3) \cdot (-5)^2 - [4+2^5-3^2 \cdot (-2)^2] - (-1)^{10} =$
- i) $(-3)^2 \cdot [4-(-6+8 \cdot (-5))] - 4 \cdot (-1-3)^0 =$
- j) $5-3 \cdot (12-7)^2 - [24 : (2-\sqrt{36})] =$
- k) $-12 : (-7+3) - (-9-3) : (-3) + (-20) : (6-7)^1 =$
- l) $[\sqrt{144} - (-2)^2 + (-5)^1]^2 : [(-7)^2 - (-1) - (+41)] =$
- m) $(5-8)^3 \cdot (-2)^2 + (-4-2) : (-3)^1 - [45 - (-8)] \cdot (-3+2)^7 =$
- n) $\sqrt{25} - [34+55 : (-13+2)] - (13-9 \cdot 2) \cdot (-2+1)^3 =$
- o) $2^4 : (-2)^3 + (-12-18) : (-16+3 \cdot \sqrt{4}) =$
- p) $[(6-11) \cdot (-3)] : [-25 : (2-(-3) \cdot (-9))] =$
- q) $(-5)^3 : (2^0-6) + \sqrt[3]{8} \cdot [(-3-1)^2 + \sqrt[3]{-8}] - (-3)^1 =$

$$\text{r)} \quad (2-5)^4 : (1-4 \cdot 7) - 2 \cdot (\sqrt{64} : (-4) + 1) - (-27) : (8^1 + 5^0) =$$

$$\text{s)} \quad (-8+6)^4 \cdot [(-9+4+13) : (-5+3 \cdot 2) - (-2)^3] - (-9+6 \cdot 3) \cdot (-6+8) =$$

$$\text{t)} \quad (-2)^5 : [(-8) : (-4) - \sqrt{9} \cdot (-2)] - [(-18) : 9 + (-3+5)^0] =$$

3. Calcula y simplifica:

$$\text{a)} \quad \frac{4}{3} : \left(\frac{1}{3} + \frac{2}{6} \right) - \frac{3}{4} =$$

$$\text{b)} \quad \frac{5}{11} \cdot \left(\frac{1}{2} - \frac{1}{10} \right) + \frac{3}{5} \cdot \left(1 + \frac{4}{11} \right) =$$

$$\text{c)} \quad \frac{4}{10} : \frac{2}{3} - \frac{4}{5} \cdot \frac{2}{3} + \frac{5}{3} - \frac{1}{4} : \frac{3}{5} =$$

$$\text{d)} \quad \frac{2}{5} : \left(\frac{1}{5} - \frac{3}{10} \right) + \left(\frac{1}{4} - \frac{1}{2} \right) =$$

$$\text{e)} \quad \frac{3}{2} + \frac{3}{4} \cdot \left(\frac{1}{3} \right)^2 - \sqrt{\frac{9}{16}} =$$

$$\text{f)} \quad \frac{6}{10} : \frac{2}{3} - \frac{4}{5} \cdot \frac{4}{3} + \frac{1}{3} - \frac{3}{4} : \frac{3}{7} =$$

$$\text{g)} \quad \frac{4}{10} : \left(\frac{2}{3} - \frac{1}{5} \right) \cdot \frac{2}{3} + \frac{5}{3} - \frac{1}{4} : \frac{3}{5} =$$

$$\text{h)} \quad \left(\frac{2}{3} - \frac{7}{2} - \frac{5}{6} + \frac{1}{4} \right) + \left(-\frac{4}{3} + \frac{2}{3} - \sqrt{\frac{1}{(-6)^2}} \right)^2 =$$

$$\text{i)} \quad \frac{4}{10} \cdot \left(\frac{2}{3} - \frac{1}{5} \right) + \frac{2}{3} : \frac{5}{3} - \frac{1}{4} \cdot \frac{3}{5} =$$

$$\text{j)} \quad \frac{\frac{1}{2} - \left(\frac{3}{4} - 1 \right)}{\frac{3}{4} + 1} =$$

$$\text{k)} \quad \frac{\left(\frac{2}{3} - \frac{5}{9} \right) \cdot \left(\frac{3}{4} - \frac{5}{6} \right)}{\left(\frac{7}{12} - \frac{5}{6} \right) \cdot \frac{4}{3} + 1} =$$

$$\text{l)} \quad \frac{\frac{2}{5} - \frac{6}{3} + \frac{2}{3}}{1 - \frac{2}{5} - \frac{6}{4}} - \frac{\frac{1}{2} + \frac{1}{3}}{\frac{2}{3} + \frac{6}{5}} =$$

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

$$\text{n)} \quad \left(1 + \frac{1}{2} \right) \cdot \left(1 - \frac{1}{3} \right) + \left(\frac{1}{2} \right)^2 \cdot \left(\sqrt{\frac{16}{25}} - \frac{3}{5} \right) =$$

4. Calcula y simplifica:

$$\text{a)} \quad -\sqrt{\frac{16}{9}} \cdot \left(\frac{1}{2} - 1 \right) + \frac{3}{4} \cdot \left(\frac{1}{3} + \frac{1}{2} : \frac{2}{3} \right) =$$

$$\text{b)} \quad 3 - \frac{2}{3} \cdot \left(\frac{1}{4} - 1 \right)^2 + \frac{3}{8} \cdot (-2) =$$

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

$$\text{d)} \quad \frac{2}{3} \cdot \left(\frac{3}{4} - \frac{1}{2} \right)^2 - \sqrt{\frac{1}{36}} \cdot \left(\frac{1}{3} - \frac{5}{6} \right)^2 =$$

$$\text{e)} \quad 5 : \left(\frac{1}{2} + 1 \right)^{-2} + 3 : \left(\frac{1}{4} - \frac{1}{2} \right)^{-1} =$$

$$\text{f)} \quad -\frac{3}{8} \left[3 - \frac{3}{5} - \left(\frac{17}{20} - 1 \right) : \left(\frac{1}{3} - 3 \right)^{-1} \right] =$$

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

$$\text{h)} \quad \frac{\left(\frac{1}{4} - \frac{7}{8} \right) : \frac{2}{3} + 1}{\left(\frac{2}{3} - \frac{3}{4} \right) \cdot \frac{5}{6}} =$$

$$\text{i)} \quad \frac{-1 + \frac{1}{4} \left(\frac{3}{5} - \frac{2}{15} \right)}{1 - \sqrt{\frac{4}{25}} : \left(\frac{1}{2} - \frac{3}{4} \right)^{-1}} =$$