

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) $(-5)^3 : (2^0 - 6) + \sqrt[3]{8} \cdot [(-3-1)^2 + \sqrt[3]{-8}] - (-3)^1 =$

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

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

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

3. Calcula y simplifica:

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

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

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

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

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

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

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

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

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

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

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

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

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

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

4. Calcula y simplifica:

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

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

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

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

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

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

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

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

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