

EXAMEN NÚMEROS REALES, POTENCIAS Y RAÍCES - 3º ESO

Ejercicio 1: (1 pto) Clasifica los siguientes números y represéntalos en la recta real

$$\pi ; 7/5 ; 0'477777\cdots ; -\sqrt{9} ; -2 ; \sqrt{7} ; \sqrt{-25} ; 14/7 ; \sqrt[3]{-8}$$

Exercise 2: (1.5 points) Work out the value of the following expressions:

a) $3'74 \cdot 10^5 + 8'3 \cdot 10^7 - 1'63 \cdot 10^8 =$

b) $-2'15 \cdot 10^{-3} + 4'29 \cdot 10^{-5} - 7'48 \cdot 10^{-6} =$

c) $(4'75 \cdot 10^{-3}) \cdot (3'17 \cdot 10^7) =$

d) $(3'2 \cdot 10^5) : (6'47 \cdot 10^{-2}) =$

Exercise 3: (1 point) Round and truncate the number $e \approx 2.7182818285$ to three significant figures and estimate both the absolute and relative errors. Which approximation is better? Why?

Exercise 4: (1 point) Convert the following decimal numbers into fractions

a) 4.37289

b) 52.934934934...

c) 7.2955555555...

d) π

Exercise 5: (0.75 points) The hair of a person grows at a speed of 10^{-8} m/s. If they don't cut it off, how much longer will it be a month later?

Exercise 6: (0.75 points) Write as an interval, an inequality and represent on the number line

a) $-1 < x \leq 4$

b) $(-\infty, 2]$

c) $(-7, 3) \cup [-3, 1]$

Ejercicio 7: (2.5 ptos) Efectúa:

a) $\frac{5}{6} + \frac{3}{5} \cdot \frac{7}{2} - \left(\frac{3}{2}\right)^2 + \frac{9}{10} : \frac{2}{3} =$

b) $3\sqrt{32} - 9\sqrt{27} + 5\sqrt{243} - \sqrt{2} + \sqrt{75} =$

c) $(3^{-3} \cdot 3^{-2}) : (3 \cdot 3^{-7}) =$

d) $\left(\frac{2}{5}\right)^{-7} \cdot \frac{1}{5} \cdot \left(\frac{5}{2}\right)^3 \cdot 5^{-2} \cdot 2^{-4} =$

e) $3^{2/5} \cdot 5^{3/2} \cdot 3^{5/6} \cdot 5^{1/10} =$

Ejercicio 8: (0.75 ptos) Extrae todos los factores que puedas de las siguientes raíces:

a) $\sqrt{54000} =$

b) $\sqrt[3]{2^7 \cdot 3^2 \cdot 5^{21} \cdot 7^{11}} =$

c) $\sqrt[5]{\frac{x^{12} y^3 z^{15}}{w^9}} =$

Ejercicio 9: (0.75 ptos) Calcula:

$$\frac{\sqrt[5]{3^2 \cdot 5^3} \cdot \sqrt[4]{7^{-3} \cdot 3^5}}{\sqrt{5^4 \cdot 3^{15}}} =$$