

EXAMEN NÚMEROS REALES, POTENCIAS Y RAÍCES - 3º ESO

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

$$\pi ; 7/5 ; 0.477777\dots ; -\sqrt{9} ; -2 ; \sqrt{7} ; \sqrt{-25} ; 14/7 ; \sqrt[3]{-8}$$

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^{-9} 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 or 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 pts) 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 pts) 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 pts) Calcula:

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