EXAMEN NÚMEROS REALES, POLINOMIOS Y FRACCIONES ALGEBRAICAS - 4º ESO B

Exercise 1: (1 pto) Clasifica los siguientes números y represéntalos en la recta real. ¿Cuáles de ellos son números reales?

-5 ; $\sqrt{3}$; -2/3 ; 4.1 ; $15/5$; $\sqrt[3]{-8}$; π ; $-\sqrt{9}$; $0.43535\cdots$; $\sqrt{-16}$

Exercise 2: (0.75 points) Write as an interval, an inequality and represent on the number line

a) $-2 \le x < 3$
b) $(-\infty, -5]$
c) $(-7,3) \cap [-3,1)$

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

Exercise 4: (1 point) Work out the value of the following expressions:

a) $5.32 \cdot 10^{-4} + 3.2 \cdot 10^{-6} - 1.75 \cdot 10^{-2} =$
b) $(1.53 \cdot 10^{-5}) : (7.4 \cdot 10^{-9}) =$

Exercise 5: (0.75 points) The distance between the Earth and the Moon is $3.8 \cdot 10^5$ km. How long would it take a space ship that travels at a speed of 200 m/s to reach its destiny?

Exercise 6: (0.75 ptos) Racionaliza:

a) $\dfrac{10}{\sqrt{5}}$ b) $\dfrac{8\sqrt{7}}{3\sqrt[5]{4^2}}$ c) $\dfrac{\sqrt{8}-\sqrt{6}}{\sqrt{8}+\sqrt{6}}$

Exercise 7: (0.5 ptos) Opera y simplifica:

$$\frac{\sqrt{5^3\,3^4} \cdot \sqrt[4]{2^5\,5^8}}{\sqrt[3]{5^4\,2^4}} =$$

Exercise 8: (2 ptos) Factor these polynomials and write their roots:

a) $P(x) = x^4 - 3x^3 + 4x^2 - 12x$
b) $Q(x) = x^4 + 9x^3 + 29x^2 + 39x + 18$

Exercise 9: (0.75 ptos) Find the value of *m* so that when dividing the polynomial $P(x) = 2x^3 - mx^2 + 5x - 7$ by $(x+3)$ the remainder is 10

Exercise 10: (1.5 ptos) Calcula y desarrolla cuanto sea posible

a) $\dfrac{5x}{x^2+7x+10} - \dfrac{x-1}{x^3-4x} =$

b) $\dfrac{7-x}{x^2-x} + \dfrac{x^2+x}{x^2-2x+1} =$