REAL NUMBERS AND POLYNOMIALS

TEST - 4º ESO

Exercise 1: (1 point) The La Palma volcano expels 2710 tons of sulfur dioxide every day. Knowing that the eruption has been going on for 39 days:

a) How many kilos of sulfur dioxide have been thrown to the atmosphere? Use scientific notation

b) Find the percentage error if I approximate the total expelled amount of sulfur dioxide to one hundred thousand tons.

Exercise 2: (1.5 points)

a) Find the value ok k so that when dividing $P(x)=x^3-kx^2+19x-10$ by $(x-3)$ the remainder is -7

b) Divide $(x^4-3x^2+5x-2):(x^2-3x)$

Exercise 3: (3 points) Factorize these polynomials and indicate their roots:

a) $P(x)=x^5-x^4-26x^3+26x^2+25x-25$

b) $P(x)=x^4+6x^3+14x^2+54x+45$

c) $P(x)=x^5+x^4-4x^3-4x^2$

Exercise 4: (1.25 points) Rationalize the following expressions:

a) $\dfrac{14}{\sqrt[5]{7^3}}=$ b) $\dfrac{15}{\sqrt{3}}=$ c) $\dfrac{3+\sqrt{7}}{3-\sqrt{7}}=$

Exercise 5: (1 point) Study the following unions and intersections of intervals and **write them as inequalities** too:

a) $(-6,-2]\cup[-4,0)=$

b) $[-1,3]\cap[3,7)=$

Exercise 6: (2.25 points) Work out, express as a single radical and simplify if possible:

a) $\sqrt[7]{x^2}:\sqrt{x^{-1}}\cdot\sqrt[5]{x^{-10}}=$ (0.5)

b) $4\sqrt{75}+5\sqrt{243}-2\sqrt{48}=$ (0.75)

c) $\dfrac{\sqrt[5]{a^{-4}}\cdot\sqrt[7]{b^{-5}}}{\sqrt{b\cdot a^{-2}}}=$ (1)