REAL NUMBERS, POWERS AND ROOTS TEST - 3º ESO

Exercise 1: **(1 point)** Classify the following numbers:

a) $\sqrt{49}$ b) $\sqrt{2}$ c) $\sqrt[3]{-125}$ d) $\sqrt[4]{-81}$ e) $\frac{\sqrt{9}}{2}$

Exercise 2: **(1 point)** The policy of a certain train company states that they will refund the ticket money if the train is a 10% or more late. The stipulated travelling time from Madrid to Barcelona is of two hours and forty-five minutes but yesterday it took us three hours and two minutes. Find the percentage error and tell me if I will get my money back.

Exercise 3: **(1 point)** Yesterday I was in a sugar spree, kill me, and I ate two fifths of the candies that I had bought for Halloween. But it gets worse, because this morning I have eaten four sevenths of the remaining ones. Luckily, I still have fifty-four candies in case some kids come knocking at my door tonight. How many candies did I buy? Should I call a doctor? Am I going to die ???

Exercise 4: **(3.25 points)** Work out, express as a single radical and simplify if possible:

a) $3\sqrt{500}-7\sqrt{320}+\sqrt{3125}=$ (1)

b) $\sqrt[5]{b^{-3}}\cdot\sqrt{b^{7}}:\sqrt[7]{b^{-1}}=$ (0.75)

c) $\dfrac{\sqrt{2^{-1}\cdot 7^{-5}}}{\sqrt[5]{2^{-3}\cdot 7^{6}}}=$ (1)

d) $a^{2/5}:a^{-7/2}=$ (0.5)

Exercise 5: **(1.25 points)** Work out:

a) $7.27\cdot 10^{-5}+8.95\cdot 10^{-4}+9.35\cdot 10^{-3}=$

b) $(7.14\cdot 10^{-4})\cdot(4.89\cdot 10^{-6})=$

c) $(5.29\cdot 10^{-7}):(8.37\cdot 10^{-3})=$

Exercise 6: **(1 point)** Work out and simplify if possible:

a) $\sqrt{3136}=$

b) $\sqrt[7]{\dfrac{x^{21}\,y^{-43}\,z^{51}}{v^{-34}}}=$

Exercise 7: **(1.5 points)** Study the following unions and intersections of intervals. Express them as inequalities too:

a) $(-\infty,-3]\cup(-3,7]=$

b) $(-7,5)\cap[1,9)=$

c) $(-\infty,1]\cap(1,5]=$