REAL NUMBERS, POWERS AND ROOTS TEST

3º ESO

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

a) $0.\overline{435}$ b) $\sqrt[5]{-1}$ c) $\frac{14}{7}$ d) $\sqrt[4]{-81}$ e) $\sqrt{3}$

Exercise 2: (1 point) The flying distance between Córdoba and New York is of $5859.4\ \text{km}$. Find the percentage error if I round it to $5800\ \text{km}$. Is it a good approximation? Why?

Exercise 3: (2 points) Work out:

a) $3.12\cdot10^{4}-1.7\cdot10^{6}+7.29\cdot10^{5}=$

b) $5.71\cdot10^{-4}-2.93\cdot10^{-6}+3.27\cdot10^{-5}=$

c) $\left(5.73\cdot10^{-3}\right)\cdot\left(4.18\cdot10^{-7}\right)=$

d) $\left(4.17\cdot10^{5}\right):\left(7.98\cdot10^{-7}\right)=$

Exercise 4: (1.5 points) Study the following unions and intersections of intervals. Express them as **inequalities** too:

a) $(-1,3)\cap(-3,0]=$

b) $(-5,2]\cup(2,7]=$

c) $(-\infty,2]\cap[0,+\infty)=$

Exercise 5: (1 point) Work out and simplify if possible:

a) $\sqrt[3]{250047}=$

b) $\sqrt[5]{\frac{a^{27}\,b^{-83}\,c^{95}}{d^{-34}}}=$

Exercise 6: (3.5 points) Work out, express as a single radical and simplify if possible:

a) $\sqrt{128}+2\sqrt{392}-5\sqrt{200}=$ (1)

b) $\frac{\sqrt[6]{a^{3}\cdot b^{-4}}\cdot\sqrt{a^{-2}\cdot b}}{\sqrt[5]{a^{-1}\cdot b^{2}}}=$ (1.25)

c) $\sqrt[3]{x^{-8}}\cdot\sqrt[5]{x}:\sqrt{x^{-3}}=$ (0.75)

d) $\sqrt[7]{2^{-11}}:\sqrt[5]{2^{-1}}=$ (0.5)