



REAL NUMBERS, POWERS AND ROOTS TEST

3º ESO



Exercise 1: (3.5 points) Work out, express as a single radical and simplify if possible:

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

b) $\frac{\sqrt[5]{a^3} \cdot \sqrt[7]{a^{-2}}}{\sqrt{a^{-1}}} =$ (0.75)

c) $\frac{\sqrt[4]{x^2 \cdot y^{-3}} \cdot \sqrt[5]{x^{-4} \cdot y^2}}{\sqrt{x^{-1} \cdot y}} =$ (1.25)

d) $3\sqrt{192} - \sqrt{147} - 2\sqrt{1875} =$ (1)

Exercise 2: (2.5 points) Work out:

a) $(2.49 \cdot 10^{-1}) \cdot (8.29 \cdot 10^{-4}) =$ (0.5)

b) $(3.52 \cdot 10^3) : (8.15 \cdot 10^{-5}) =$ (0.5)

c) $2.34 \cdot 10^5 - 3.45 \cdot 10^6 + 4.56 \cdot 10^7 =$ (0.75)

d) $7.65 \cdot 10^{-5} - 6.54 \cdot 10^{-4} + 5.43 \cdot 10^{-6} =$ (0.75)

Exercise 3: (1.75 points) Study the following unions and intersections of intervals. Express them as inequalities too:

a) $(-2, 4) \cup [4, 9] =$

b) $(0, 2] \cap [2, 8) =$

c) $(-\infty, 1] \cup [-5, 0) =$

d) $(-\infty, 3] \cap [4, 9) =$

Exercise 4: (1.25 points) I'm going to bake a pumpkin and carrot cake for Halloween. The recipe says that I need half a kilo of pumpkins and 300 gr of carrots, but I only have 475 gr of pumpkins and a quarter of a kilo of carrots. Find the percentage errors for both of them and tell me if you think that the recipe is going to work fine.

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

a) $\sqrt[5]{248832} =$

b) $\sqrt[7]{\frac{a^{-39} b^{97} c^{42}}{d^{-51}}} =$

