



FIRST TERM GLOBAL TEST
2° ESO



Exercise 1: (1 pto) Classify the following rational numbers and then turn them into fractions:

a) $4.5\overline{29} = \{\text{mixed repeating}\} = \frac{4077}{900}$

b) $5.\overline{124} = \{\text{pure repeating}\} = \frac{5119}{999}$

c) $7.5893 = \{\text{terminating}\} = \frac{75893}{10000}$

Exercise 2: (1.5 ptos) Write the following numbers using scientific notation:

a) $7238456000000000 = 7.24 \cdot 10^{16}$

b) $0.00000367921 = 3.68 \cdot 10^{-6}$

c) $237.458922 \cdot 10^{-7} = 2.37 \cdot 10^{-5}$

d) $0.0000432 \cdot 10^2 = 4.32 \cdot 10^{-3}$

Exercise 3: (2.25 ptos) Work out:

a) $(x^3 \cdot x^{-1}) \cdot (x^7 : x^5) = x^4$

b) $(a^3 \cdot a^{-7}) : (a^{-5} \cdot a^{-2}) = a^3$

c) $(y \cdot y^{-3}) : (y^4 : y^{-5}) = \frac{1}{y^{11}}$

d) $\frac{x^5 \cdot y^{-3} \cdot x^{-7}}{y^{-2} \cdot x^{-3} \cdot y} = \frac{x}{y^2}$

Exercise 4: (1.25 ptos) Work out:

a) $\sqrt{144000000} = 12000$

b) $\sqrt[3]{1728} = 12$

c) $\sqrt[4]{\frac{a^{-12} \cdot b^{20}}{c^{-36}}} = \frac{b^5 c^9}{a^3}$

Exercise 5: (1.5 ptos)

a) Divide 3750€ in a directly proportional way to 2, 3 and 5 $a = 750€$ $b = 1125€$ $c = 1875€$

b) Fill in the gaps in this table knowing that the magnitudes are **inversely proportional**. Find the value of the constant too:

12	6	20	4	120	25	$k = 60$
5	10	3	15	0.5	2.4	

Exercise 6: (2.5 ptos)

- a) We want to make an army of toy elves to decorate the high school. We will win the contest. 28 students need 4.5 hours to make them all. How long would 90 students need? **1h 24min**
- b) And little snowmen too. 25 students can make 20 snowmen during the Crafts class. How many students do we need in order to make seventy snowmen? **88 students. You can't cut people**
- c) Cardboard is very expensive right now but the shop keeper told us that we are getting a 12% discount, special offer, so we only have to pay 26.4€. What was the original price? **30€**

