FIRST TERM GLOBAL TEST

2º ESO

Exercise 1: (2.25 ptos) Work out:

a) $(a^{-3}\cdot a^{-8}):a^{4}=\frac{1}{a^{15}}$

b) $(b^{-2}\cdot b^{5}):b^{3}=1$

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

d) $\frac{x^{-5}\cdot x^{-2}\cdot y^{3}}{y^{5}\cdot x^{7}\cdot y^{-8}}=\frac{y^{6}}{x^{14}}$

Exercise 2: (1.25 ptos) Work out:

a) $\sqrt[5]{3200000}=20$

b) $\sqrt[7]{\frac{x^{-35}y^{63}}{z^{-14}}}=\frac{z^{2}y^{9}}{x^{5}}$

c) $\sqrt{19360000}=4400$

Exercise 3: (1 pto) Classify the following numbers and turn them into fractions:

a) $7.\overline{84}=\{\text{pure repeating}\}=\frac{777}{99}$

b) $4.1234=\{\text{terminating}\}=\frac{41234}{10000}$

c) $2.3\overline{4798}=\{\text{mixed repeating}\}=\frac{234775}{99990}$

Exercise 4: (0.75 ptos) Fill in the gaps in this table and find the value of the constant of proportion knowing that the magnitudes are inversely proportional:

5	10	4	$53.\overline{3}$	160
16	8	20	1.5	0.5

$k=80$

Exercise 5: (1 pto) Write the following numbers using scientific notation:

a) $0.000000043654729=4.37\cdot10^{-8}$

b) $16384.79\cdot10^{-8}=1.64\cdot10^{-4}$

c) $0.00002247\cdot10^{-4}=2.47\cdot10^{-10}$

Exercise 6: (1.5 ptos)

a) Due to a Christmas promotion the price of a present has been reduced by 20% and now it costs 40.6€. What was the price before? $50.75€$

b) $2-(2-4)^{3}+3\cdot\sqrt{49}:(-7)=7$

Exercise 7: (2.25 ptos)

a) Eight elves need twelve hours to place all the presents on Santa's sleigh. How long would fifteen elves need? 6h 24'

b) I have bought 1.75 m of gift ribbon in order to make bows for my presents. If I need 20 cm for each bow, how many will I get? How much ribbon is left? You get 8 ribbons and 15 cm left

c) Divide 357€ in a directly proportional way to 5, 7 and 9 $x = 85€$ $y = 119€$ $z = 153€$