



## FIRST TERM GLOBAL TEST

### 2° ESO



**Exercise 1: (1 pto)** Given the following table representing two inversely proportional magnitudes, fill in the gaps and find the value of the constant k:

2	6	12	24	45	4	k = 36
18	6	3	1.5	0.8	9	

**Exercise 2: (1.5 points)**

a) Divide 375€ in a directly proportional way to 3, 5 and 7  $a = 75€$   $b = 125€$   $c = 175€$

b)  $5 - 3 \cdot \sqrt{17-1} - (-1)^6 + 3 \cdot 2^3 = 16$

**Exercise 3: (2.25 ptos)** Work out:

a)  $(x^{-2} \cdot x^{-5}) : (x^3 \cdot x) = \frac{1}{x^{11}}$

b)  $(a^5)^{-2} : (a^3 : a^7) = \frac{1}{a^6}$

c)  $(w^2 : w^{-3}) \cdot (w : w^9) = \frac{1}{w^3}$

d)  $\frac{x^3 \cdot y^4 \cdot x^{-7}}{y^{-5} \cdot x \cdot y^2} = \frac{y^7}{x^5}$

**Exercise 4: (1.5 ptos)** Write the following numbers using scientific notation:

a)  $34\,756\,902\,479\,000\,000\,000 = 3.48 \cdot 10^{19}$

b)  $0.000\,000\,000\,000\,007\,496\,654 = 7.5 \cdot 10^{-15}$

c)  $748\,723 \cdot 10^{-2} = 7.49 \cdot 10^3$

d)  $0.000\,621\,493 \cdot 10^{-9} = 6.21 \cdot 10^{-13}$

**Exercise 5: (1.25 ptos)** Find the value of these roots:

a)  $\sqrt[7]{\frac{a^{-42}v^{-14}}{e^{21}}} = \frac{1}{e^3v^2a^6}$

b)  $\sqrt[4]{16\,000\,000\,000\,000} = 2000$

c)  $\sqrt{2025} = 45$

**Exercise 6: (1.5 ptos)**

a) Extra virgin olive oil costs now 5.45€/l in a famous supermarket, what represents an increase of 30% on the price two weeks ago. Find the original price of a liter of oil. **4.19€**

b) Thirty elves working at full speed are able to wrap half a million presents. How many elves do we need to wrap 432827 presents? **26 elves**

**Exercise 7: (1 pto)** Classify the following rational numbers and then turn them into fractions:

a)  $12.327 = \frac{12327}{1000}$

Terminating

b)  $4.\overline{279} = \frac{4237}{990}$

Mixed repeating

c)  $2.\overline{9845} = \frac{29843}{9999}$

Pure repeating

