**EXAMEN NÚMEROS NATURALES, POTENCIAS Y RAÍCES - 1º ESO - MODELO B**

**Exercise 1: (0.5 points)** Round each quantity to two significant figures and then express it as the product of a natural number and a power of base 10

a) 7 396 542 000 000 000 =
b) 37 291 349 000 000 =

**Ejercicio 2: (1 point)** Expresa el resultado como una sola potencia:

a) $(z^2 \cdot z \cdot z^8)^3 : z^4 =$
b) $3^4 \cdot 5^2 =$
c) $(2^4 \cdot 2^5) : (2 \cdot 2^8) =$
d) $5^7 \cdot 8^7 : 4^7 =$

**Exercise 3: (1 point)** Work out the value of these powers and write the answer with words in English

a) $2^6 =$
b) $10^5 =$
c) $9^0 =$
d) $5^4 =$
e) $1^{32} =$

**Exercise 4: (1 point)** Richard buys four notebooks, €4 each, and six pens, €2 each. If he pays with a €50 bill, how much money will he get in return?

**Ejercicio 5: (2 puntos)** Calcula:

a) $4 + 9 : 3 - 1 + 2 \cdot 7 =$
b) $17 - 2 \cdot (4 + 3 \cdot 2 - 5) + 6 \cdot 0 - 1^5 =$
c) $3 \cdot \sqrt{25} - 2 + (5 - \sqrt{16})^5 + 2^3 =$
d) $(\sqrt{64} - \sqrt{25})^2 + 4 \cdot 3^2 - 2 + 20 : 5 =$

**Ejercicio 6: (0.5 puntos)** Calcula el número expresado en cada caso:

a) $5 \cdot 10^5 + 7 \cdot 10^4 + 3 \cdot 10^3 + 10^2 + 8 \cdot 10 + 2 =$
b) $5 \cdot 10^7 + 4 \cdot 10^4 + 10^2 + 9 \cdot 10 =$

**Exercise 7: (0.75 points)** We want to place tiles filling a square, with 17 tiles on every side. How many tiles do we need?

**Exercise 8: (1.5 points)** Calculate:

a) $7\sqrt{2} + 3\sqrt{6} + \sqrt{3} + 4\sqrt{3} + \sqrt{6} - 2\sqrt{2} - 5\sqrt{3} =$
b) $\sqrt{2} \cdot \sqrt{3} \cdot \sqrt{6} =$
c) $(\sqrt{32} : \sqrt{2}) \cdot (\sqrt{27} : \sqrt{3}) =$

**Ejercicio 9: (0.5 puntos)** Acota el valor de estas raíces cuadradas e indica cuál es la raíz entera:

a) $\sqrt{87}$
b) $\sqrt{52}$

**Exercise 10: (1.25 points)** We have a square field with an area of 4900 $m^2$ and we want to buy wire fence to round it. How many meters do we need? If every meter of wire fence costs €15, how much money will it cost?