

## DECIMALS AND ALGEBRA TEST - 2º ESO

**Exercise 1: (1 point)** Three quarters of a kilo of strawberries cost 1.75€. How much do I have to pay for 2.5 kilos?

**Exercise 2: (0.75 points)** Transform:

- a) 3.2857 thousandths into hundred-thousandths
- b) 437.148 ten-thousandths into hundredths
- c) 87.297 tenths into thousandths

**Exercise 3: (1.5 points)** Given the polynomials:

$$A(x) = 8x^3 - 5x^2 - 9$$

$$B(x) = -x^3 - 5x^2 + 3x - 12$$

$$C(x) = 2x - 3$$

Work out the value of the following operations:

- a)  $A + B =$
- b)  $A - B =$
- c)  $A \cdot C =$

**Exercise 4: (1 point)** Evaluate the following polynomials for the given values of the variables:

- a)  $P(x) = x^4 - 5x^3 + 7x - 8$  when  $x = -2$
- b)  $Q(x, y) = 2xy + x^2 - 5y + xy^3$  when  $x = -1, y = 2$

**Exercise 5: (1.5 points)** Expand these expressions using quadratic multiplication formulas:

- a)  $(2x - 3)(2x + 3) =$
- b)  $(5x^3 - 2y^4)^2 =$
- c)  $(t - 9)^2 =$
- d)  $(7ab^2 + a^3c)^2 =$

**Exercise 6: (1.5 points)** Take out all the common factors:

- a)  $2x^7 - 4x^5 + 8x^4 - 10x^3 - 12x^2 =$
- b)  $x^2y^3z^3 + x^3y^2z^3 + x^3y^3z^2 =$
- c)  $a^2bc^3 - a^4b^2c^5 + a^2bc - 3a^5b^4c^3 =$

**Exercise 7: (1.25 points)** Write these numbers using scientific notation:

- a) 0.0000000008754 =
- b) 39728395274100000 =
- c)  $853.794 \cdot 10^{-5} =$
- d)  $0.0032864 \cdot 10^7 =$
- e)  $42835.729 \cdot 10^4 =$

**Exercise 8: (1.5 points)** Classify these decimal numbers and then turn them into fractions:

- a)  $32.\overline{742} =$
- b)  $5.44444 =$
- c)  $\overline{7.324} =$
- d)  $\pi =$