

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) $0.000000008754 =$

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) $\pi =$