

POLYNOMIALS AND EQUATIONS TEST – 3º ESO

Exercise 1: (1 point) Evaluate the polynomial $P(x) = 4x^3 - 3x^2 - 5x + 2$ when:

- a) $x = 2$
- b) $x = -1$

Exercise 2: (2 points) Expand using quadratic multiplication formulas:

- a) $(5x-1)^2 =$
- b) $(2v+3w)^2 =$
- c) $(7a-3)(7a+3) =$
- d) $(2x^5 - x^3)^2 =$

Exercise 3: (1.5 points) Solve the following second degree equations without using the formula:

- a) $28x^2 - 7 = 0$
- b) $25x^2 - 9 = 0$
- c) $8x^2 + 6x = 0$

Exercise 4: (2 points) Solve the following second degree equations:

- a) $x^2 - 9x + 8 = 0$
- b) $x^2 - 4x + 4 = 0$
- c) $6x^2 - 11x - 10 = 0$
- d) $x^2 + 4x = 5x + 6$

Exercise 5: (1 point) Find the dimensions of a triangle if the base is 7 cm longer than the altitude and its area measures 85 cm^2

Exercise 6: (1 point) Solve the equation $\frac{(x-2)^2}{4} = x+1$

Exercise 7: (1.5 points) Factor out these expressions taking out common factors and using quadratic multiplication formulas:

- a) $2x^4 - 28x^3 + 98x^2 =$
- b) $a^3b - 9ab^3 =$

