

EQUATIONS AND ALGEBRAIC FRACTIONS TEST - 3º ESO

Exercise 1: (0.5 points) Solve the equation $x^3(x-5)(x+2)^2(x-7) = 0$

Exercise 2: (1.25 points) Divide the following polynomials and indicate the quotient and the remainder:

a) $(2x^4 - 5x^3 + 3x^2 - 4) : (x^2 - 3)$

b) $(x^5 - 4x^3 + 5x^2 - x + 4) : (x + 2)$

Exercise 3: (3 points) Factor the following polynomials and indicate their roots:

a) $P(x) = x^7 - 5x^6 - 2x^5 + 24x^4$

b) $Q(x) = x^4 - 4x^3 + 7x^2 - 12x + 12$

c) $R(x) = 5x^3 + 3x^2 - 32x + 12$

Exercise 4: (2.5 points) Simplify:

a) $\frac{x^4 - 23x^2 - 50}{(3x^4 + 6x^2)(x^2 - 10x + 25)} =$ (1.5)

b) $\frac{a^3b^3c^4 + a^2b^4c^4 + a^2b^3c^5}{a^2b + ab^2 + abc} =$ (1)

Exercise 5: (1.5 points) Work out:

a) $\frac{9}{5x-7} = \frac{2}{3x+4}$

b) $\frac{3}{x^2-4} - \frac{2}{x^2+x-6} + \frac{x}{x+3} =$

Exercise 6: (0.75 points) Creo que me he equivocado...

$$6x^4 + 5x^3 + 7x^2 + 15x = (x-3)(x+5)(x+7)$$

Sin resolver la ecuación, indica todos los errores que encuentres.

Exercise 7: (0.5 points) Work out the value of k so that $P(x) = kx^3 - 3x^2 + 2x - 25$ can be divided by $(x-2)$