

## EQUATIONS TEST – 3º ESO

**Exercise 1: (1.5 ptos)** Solve:

a)  $\frac{x+1}{x-1} = \frac{2x-1}{x+1}$

b)  $(x-4)^2 + (x-2)^2 = 34$

**Exercise 2: (2.5 ptos)** Solve and classify the following systems of equations using the indicated method:

a)  $\left. \begin{array}{l} 3x + 2y = 5 \\ 4x - y = 14 \end{array} \right\}$  Substitution

b)  $\left. \begin{array}{l} 4x - 2y = 3 \\ 6x - 3y = 7 \end{array} \right\}$  Elimination

c)  $\left. \begin{array}{l} x - 7y = -5 \\ 2x - 5y = 1 \end{array} \right\}$

d)  $\left. \begin{array}{l} x + y = 1 \\ 3x + y = 7 \end{array} \right\}$  Graphical

**Exercise 3: (0.75 ptos)** Find the value of  $k$  so that the polynomial  $P(x) = x^3 - kx^2 + 3x - 2$  is a multiple of  $(x+2)$

**Exercise 4: (1.5 ptos)** Divide the following polynomials and indicate the quotient and the remainder:

a)  $(x^4 + 5x^3 - 4x + 7) : (x+1) =$

b)  $(x^4 - 5x^3 + 4x^2 - 7) : (x^2 - 2) =$

**Exercise 5: (3 ptos)** Find the roots of these polynomials and factorize them:

a)  $P(x) = x^3 + 7x^2 + 16x + 12$

b)  $Q(x) = x^5 - 10x^3 + 9x$

c)  $R(x) = x^4 + 2x^3 - x^2 + 4x - 6$

**Exercise 6: (0.75 ptos)**

Two vegetal sandwiches and three lattes cost 15.2€, while three vegetal sandwiches and two lattes cost 19.3€. Find the price of each product.

