



SECOND TERM GLOBAL TEST
3º ESO



Exercise 1: (3 ptos) Factorize the following polynomials and indicate their roots:

a) $P(x) = x^4 + 6x^3 + 13x^2 + 12x + 4$

b) $Q(x) = x^5 - 5x^3 + 4x$

c) $R(x) = x^3 - 2x^2 + 9x - 18$

Exercise 2: (0.75 ptos) Find the value of k so that the polynomial $P(x) = x^3 + kx^2 + x + 8$ is divisible by $(x+1)$

Exercise 3: (3.25 ptos) Solve and classify the following systems of equations using the indicated method:

a) $\begin{cases} 2x - y = 3 \\ 6x - 3y = 9 \end{cases}$ Substitution

b) $\begin{cases} 5x - y = 6 \\ 8x - 3y = 11 \end{cases}$ Elimination

c) $\begin{cases} 2x + 3y = 4 \\ 5x - 2y = 1 \end{cases}$

d) $\begin{cases} x + y = 7 \\ 2x - y = -1 \end{cases}$ Graphical

Exercise 4: (1 pto) Divide the following polynomials: $(4x^4 - 6x^2 + 2x - 10) : (x^2 - 2) =$

Exercise 5: (2 ptos) Solve the following equations:

a) $(2x+1)^2 - (x-2)^2 = -7$

b) $\frac{5x+1}{x-3} = \frac{3x-3}{x-5}$

