GLOBAL TEST - 2ª EVALUATION - 3º ESO

Exercise 1: (1 point) In an arithmetic sequence, $a_1 = -5$ and $a_{47} = 409$. Find the general term and the sum of the first 129 terms.

Exercise 2: (1 point) In an arithmetic sequence, $a_{25} = 84$ and $a_{79} = 246$. Find the general term.

Exercise 3: (1 point) In a geometric sequence, $a_1 = 11$ and $a_9 = 72171$. Find the general term and the sum of the first 73 terms.

Exercise 4: (3 points) Factor the following polynomials and indicate their roots:

a) $P(x) = x^5 - x^4 - 10x^3 + 10x^2 + 9x - 9$

b) $Q(x) = x^4 - 10x^3 + 37x^2 - 60x + 36$

c) $R(x) = x^6 + x^5 + x^4 + x^3$

Exercise 5: (2 points) Solve and classify the following systems of equations using the indicated method:

a) $\left.\begin{matrix} 8x + y = 1 \\ 5x - 2y = 19 \end{matrix}\right\}$ Substitution

b) $\left.\begin{matrix} 6x - 2y = 10 \\ 3x - y = 5 \end{matrix}\right\}$ Elimination

c) $\left.\begin{matrix} 5x + 2y = 9 \\ 7x + 3y = 16 \end{matrix}\right\}$ Whatever

Exercise 6: (2 points) Work out:

a) $(3x-1)^2 = 25$

b) $(2x-5)(x-3) =$

c) $(x^4 - x^3 - 7x^2 + 5x - 12) : (x^2 - 1) =$