



SECOND TERM GLOBAL TEST
3º ESO



Exercise 1: (1 pto) In a geometric progression we know that $r = 2$ and $a_{16} = 425984$. Find the general term, and the sum of the first one hundred and thirty-seven terms.

Exercise 2: (1 pto) In an arithmetic progression we know that $a_4 = 11$ and $a_{19} = -49$. Find the general term and the sum of the first two hundred terms.

Exercise 3: (0.75 points) How many terms are there in the sequence given by $\{11, 22, 44, 88, \dots, 369098752\}$

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

a) $45x^2 + 5x = 0$

b) $25x^2 - 81 = 0$

c) $20x^2 - 3x - 2 = 0$

d) $x^2 - 26x + 169 = 0$

Exercise 5: (1 pto) Solve the following equation:

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

Exercise 6: (2.5 ptos) Solve the following systems of equations using the indicated method:

a)
$$\left. \begin{array}{l} 3x - y = -13 \\ 5x + 2y = 4 \end{array} \right\} \text{ Substitution} \quad (0.75)$$

b)
$$\left. \begin{array}{l} 5x - 3y = 33 \\ 7x + 2y = 9 \end{array} \right\} \text{ Elimination} \quad (0.75)$$

c)
$$\left. \begin{array}{l} x + y = -6 \\ 2x - y = 0 \end{array} \right\} \text{ Graphical} \quad (1)$$

Exercise 7: (1.75 ptos) Divide the following polynomials and indicate the quotient and the remainder:

a) $(x^4 - 7x^3 + 4x^2 - 3) : (x + 1) \quad (0.75)$

b) $(x^4 + 5x^3 - 8x^2 + 2x - 3) : (x^2 - x) \quad (1)$

