



**SECOND TERM GLOBAL TEST**  
**3° ESO**



**Exercise 1: (1 pto)** In a geometric progression we know that  $r = 2$  and  $a_{15} = 212992$ . Find the general term, and the sum of the first thirty-seven terms.

**Exercise 2: (1 pto)** In an arithmetic progression we know that  $a_6 = 3$  and  $a_{21} = -57$ . Find the general term and the sum of the first two hundred terms.

**Exercise 3: (0.75 ptos)** Find the position of the term 300 in the sequence  $\{12, 18, 24, 30, 36, \dots\}$

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

a)  $21x^2 + 3x = 0$

b)  $100x^2 - 9 = 0$

c)  $x^2 - 28x + 196 = 0$

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

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

a)  $\frac{3x-1}{x+3} = \frac{7}{3x+1}$

b)  $(2x-3)^2 = (x+2)^2$

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

a)  $\left. \begin{array}{l} 3x - y = 22 \\ 5x + 2y = 11 \end{array} \right\}$  Substitution (0.75)

b)  $\left. \begin{array}{l} 5x - 3y = 46 \\ 7x + 2y = 21 \end{array} \right\}$  Elimination (0.75)

c)  $\left. \begin{array}{l} 3x + y = 1 \\ 2x - y = -11 \end{array} \right\}$  Graphical (1)

**Exercise 7: (0.75 ptos)** If  $P(x) = 7x^2 - 6x + 5$  and  $Q(x) = 3x - 1$  work out the value of  $P \cdot Q$

