7) $4x^2+12x+8$ $\quad a_0=7 \quad a_1=5$

$$\frac{-b \pm \sqrt{b^2-4ac}}{2a}$$

$$\frac{-12 \pm \sqrt{12^2-4(4)(8)}}{2(4)} = \frac{-12 \pm \sqrt{144-128}}{8}$$

$$\frac{-12 \pm 4}{8} = r_1=-1 \quad r_2=-2$$

$a_n = k_1 r_1^n + k_2 r_2^n$

$7 = -k_1 - k_2$

$5 = -k_1 - 2k_2 \quad (-1)$

$\boxed{2 = k_2}$

$7 = -k_1 - 2$

$9 = -k_1 \Rightarrow \boxed{k_1 = -9}$

$a_n = -9 \cdot (-1)^n + 2 \cdot (-2)^n$

$a_{1500} = -9 \cdot (-1)^{1500} + 2 \cdot (-2)^{1500}$

3) Variacion con repeticion

$n=4 \quad m=4$

$m^n = 4^4 \rightarrow 256$