MATH 1040 - Coreq to MATH 1151 - Week 10 MOLS

1. Find a closed formula for the general term a_n for each of the following arithmetic sequences:

   (a) $a_3 = -3,\ a_8 = 17$ $\quad a_n = 4n - 15$

2. Find a closed formula for the general term a_n for each of the following geometric sequences:

   (a) $a_2 = 20,\ a_4 = 5$ $\quad a_n = 80(\frac{1}{2})^n$

3. Let P_t be the population of a colony of bacteria at time t. If P_t is defined by the following recurrence relation, find an exponential function which predicts the population of the colony:

$$\begin{cases} P_0 = 8500 \\ P_{t+1} = 4P_t \end{cases}$$

   $f(x) = 8500(4)^x$