Please complete this worksheet by **November 17th, 2021** by **11:59pm**.

Once you upload a picture of your work ([here](#)), the solutions will become available so you can study for the weekly quizlet, which may draw one problem from this week’s worksheets.

**Problem 1**

Adapted from *Discrete Mathematics and Its Applications* by Kenneth Rosen. A model for the number of lobsters caught per year is based on the assumption that the number of lobsters caught per year \( L(n) \) is equal to the average of the number of lobsters caught in the previous two years. Assume that 100,000 lobsters were caught in year 1 and 300,000 lobsters were caught in year 2. Roughly how many lobsters will be caught in 100 years? 1000 years?

**Problem 2**

Find a solution to the following linear recurrence.

\[
T(n) = 6T(n-1) - 9T(n-2) \quad \text{with} \quad T(0) = 0 \quad \text{and} \quad T(1) = 1.
\]