Quiz 7 (individual quiz)

Write down your problem solving process and how you get to the solution. No points is given without explanation. You don’t need to calculate out the final number.

Name:

ID #:

Fibonacci Variation:
A single pair of rabbits is born at the beginning of a year. Assuming rabbit pairs are not fertile during the first month of life, but thereafter give birth to 4 new pairs at the end of every month. No rabbits die. Let \( R(n) \) be the # of pairs of rabbits alive at the end of month \( n \).

a. Compute \( R(0), R(1), R(2), R(3), R(4) \)

b. Find a recurrence relation for \( R(n) \)

Use iteration to guess an explicit formula for the sequence

a. \( T(n) = n \, T(n-1) \), for all \( n>=1 \). \( T(0) = 1 \)

b. \( T(n) = 5 \, T(n-1) + 2 \), for all \( n>=1 \). \( T(0) = 1 \)