1. POD has a sample of a species of bacteria, the population of which increases by a factor of 3.86 in each generation. If POD originally started with 5 bacteria, write a Python program using Euler's method to approximate how many bacteria are present after 17 generations.

Hint: the derivative that you are solving is $y' = 3.86 \times y$.

2. POD has a sample of a species of bacteria, the population of which increases by a factor of 3.89 in each generation. If POD originally started with 38 bacteria, write a Python program using Euler's method to approximate how many bacteria are present after 10 generations.

Hint: the derivative that you are solving is $y' = 3.89 \times y$.

3. POD has a sample of a species of bacteria, the population of which increases by a factor of 2.21 in each generation. If POD originally started with 41 bacteria, write a Python program using Euler's method to approximate how many bacteria are present after 14 generations.

Hint: the derivative that you are solving is $y' = 2.21 \times y$.