Quiz 7
10/30/2023

A population grows according to the equation

$$\frac{dP}{dt} = 0.04P \left(1 - \frac{P}{1200}\right), \quad P(0) = 60$$

where t is measured in weeks.

1. What are the growth rate and the carrying capacity?

2. Use the method of separation of variable to derive the solution of the equation. Make sure to use the initial condition to solve for the constant. *Hint: you can use the identity*

$$\frac{dP}{P\left(1 - \frac{P}{1200}\right)} = \frac{dP}{P} + \frac{dP}{1200 - P}$$

3. What is the population in 10 weeks?