Lesson 7.4 Practice: Logistic Functions

School Launch · Algebra II · Unit 7: Exponential Functions · Worksheet A

Calculator for decimals

Name _____ Date _____ Score _____ / 10

Show your work under each problem, one step per line, and check your answer. Word problems: name the unknown, write the equation, solve, and answer in a sentence with units.

1. A population follows $P(t) = \frac{3900}{1+26e^{-0.2t}}$. Give the carrying capacity, the initial population (nearest whole), and $P(5)$ (nearest whole). EASY

2. A population follows $P(t) = \frac{3300}{1+21e^{-0.2t}}$. Give the carrying capacity, the initial population (nearest whole), and $P(11)$ (nearest whole). EASY

3. A population follows $P(t) = \frac{1300}{1+5e^{-0.2t}}$. Give the carrying capacity, the initial population (nearest whole), and $P(14)$ (nearest whole). EASY

4. A population follows $P(t) = \frac{3600}{1+30e^{-0.5t}}$. Give the carrying capacity, the initial population (nearest whole), and $P(13)$ (nearest whole). MEDIUM

5. A population follows $P(t) = \frac{1900}{1+11e^{-0.5t}}$. Give the carrying capacity, the initial population (nearest whole), and $P(8)$ (nearest whole). MEDIUM

6. A population follows $P(t) = \frac{4300}{1+4e^{-0.2t}}$. Give the carrying capacity, the initial population (nearest whole), and $P(14)$ (nearest whole). MEDIUM

7. A population follows $P(t) = \frac{2200}{1+6e^{-0.3t}}$. Give the carrying capacity, the initial population (nearest whole), and $P(4)$ (nearest whole). MEDIUM

8. A population follows $P(t) = \frac{1900}{1+26e^{-0.3t}}$. Give the carrying capacity, the initial population (nearest whole), and $P(11)$ (nearest whole). HARD

9. A population follows $P(t) = \frac{4200}{1+16e^{-0.2t}}$. Give the carrying capacity, the initial population (nearest whole), and $P(1)$ (nearest whole). HARD

10. A population follows $P(t) = \frac{3600}{1+6e^{-0.2t}}$. Give the carrying capacity, the initial population (nearest whole), and $P(14)$ (nearest whole). HARD