Name _____ Date _____ Class _____

Reinforcement and Study Guide

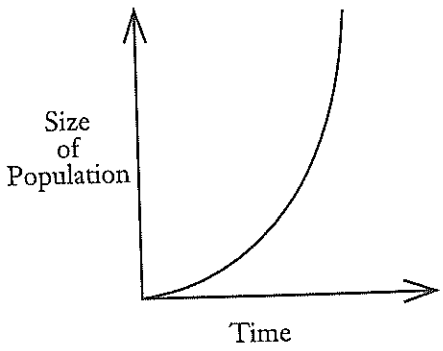
Chapter 4 **Population Biology**

Section 4.1 Population Dynamics

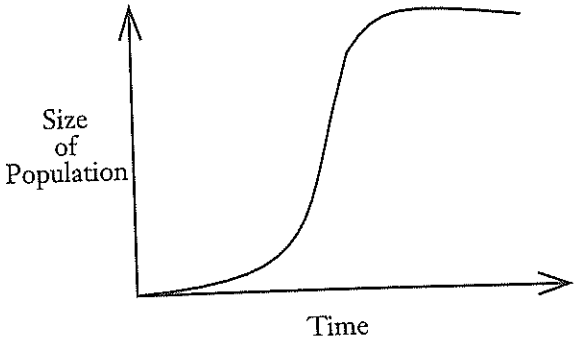
In your textbook, read about the principles of population growth.

Refer to Graphs A and B below. Answer the following questions.

Graph A



Graph B



1. What type of population growth is shown in Graph A? Explain this type of growth.

_____

_____

2. Which graph shows the most likely growth of a squirrel population living in a forest? _____

3. Which graph shows a population's growth under ideal conditions? _____

4. Why don't populations of organisms grow indefinitely?

_____

_____

_____

Use each of the terms below just once to complete the passage.

grows	**carrying capacity**	**below**	**births**
above	**under**	**deaths**	**exceed**

The number of organisms of one species that an environment can support is called its **(5)** _____. If the number of organisms in a population is **(6)** _____ the environment's carrying capacity, births **(7)** _____ deaths and the population **(8)** _____. If the number of organisms rises **(9)** _____ the carrying capacity of the environment, **(10)** _____ will exceed **(11)** _____. This pattern will continue until the population is once again at or **(12)** _____ the carrying capacity.

Circle the letter of the choice that best completes the statement.

13. The most important factor that determines population growth is the organism's
- **a.** social pattern.
- **b.** carrying capacity.
- **c.** reproductive pattern.
- **d.** feeding pattern.

14. Organisms that follow a rapid life-history pattern
- **a.** have short life spans.
- **b.** have small bodies.
- **c.** reproduce early.
- **d.** all of the above

15. Organisms that follow a slow life-history pattern
- **a.** have small bodies.
- **b.** mature rapidly.
- **c.** reproduce slowly.
- **d.** all of the above

16. A limiting factor that has an increasing effect as population size increases is
- **a.** temperature.
- **b.** habitat disruption.
- **c.** drought.
- **d.** competition.

In your textbook, read about how organism interactions limit population size.

Answer the following.

17. The snowshoe hare is a primary source of food for the Canadian lynx. Explain how the lynx population size changes when the hare population increases.

_____

_____

18. Explain how the change in the lynx population size affects the hare population.

_____

_____

19. What is the relationship between the lynx and the hare called?

_____

_____

20. When does competition decrease the size of a population?

_____

_____

21. What can cause an organism to exhibit stress, and what symptoms of stress can lead to a decrease in population size?

_____

_____