

**Chapter 16 Evolution of Populations** **Section Review 16-2**

**Reviewing Key Concepts**

**Short Answer** *On the lines provided, answer the following questions.*

1. How might natural selection on single-gene traits lead to evolution?  
\_\_\_\_\_
2. What is directional selection?  
\_\_\_\_\_  
\_\_\_\_\_
3. In stabilizing selection, how does the fitness of individuals at the center of the curve differ from the individuals at either end?  
\_\_\_\_\_
4. How does disruptive selection result in two distinct phenotypes?  
\_\_\_\_\_  
\_\_\_\_\_
5. What occurs during genetic drift?  
\_\_\_\_\_

**Completion** *On the lines provided, complete the sentences in the following paragraph.*

There are five conditions required to maintain genetic equilibrium. First, \_\_\_\_\_  
6. \_\_\_\_\_ ensures that every member of a population has an equal chance to pass on its genes. Second, an extremely large population is necessary to minimize genetic drift. Third, the population's gene pool must be kept \_\_\_\_\_  
7. \_\_\_\_\_ from other gene pools. Fourth, genes must not mutate from one form to another. Finally, so that all genes have an equal probability of survival, there can be no \_\_\_\_\_  
8. \_\_\_\_\_.

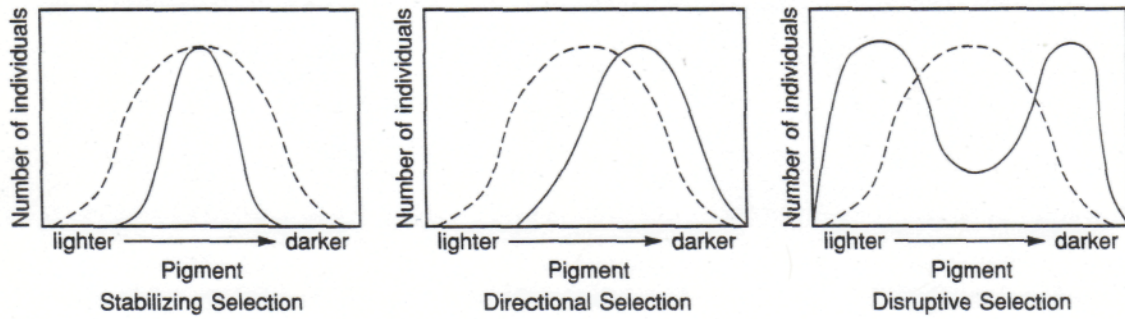
**Reviewing Key Skills**



9. **Applying Concepts** You examine these two beaks: One is narrow and needlelike. The other looks like a pair of pliers. What type of natural selection could have produced birds with these two extreme types of beaks? Explain your answer.  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

© Pearson Education, Inc. All rights reserved.

**Using Science Skills: Analyzing graphs**



The graphs show three types of natural selection. In each graph the dashed line shows the normal curve of distribution, or bell-shaped curve. Each solid line shows the result of selection on a butterfly population in which there is a variation in wing color from light to dark.

1. In which type of selection are the very light-colored and the very dark-colored butterflies eliminated?

---



---



---

2. Which type of selection acts against the intermediate-colored butterflies and favors the light-colored and dark-colored butterflies.

---



---



---

3. Suppose artificial selection greatly increases the number of dark-colored butterflies. Which type of selection curve will occur among the butterflies?

---



---



---

4. Which type of selection occurred among the peppered moths of England following the Industrial Revolution that stained London's tree trunks dark brown?

---



---



---