

Chapter 1--Introduction: Learning to Change

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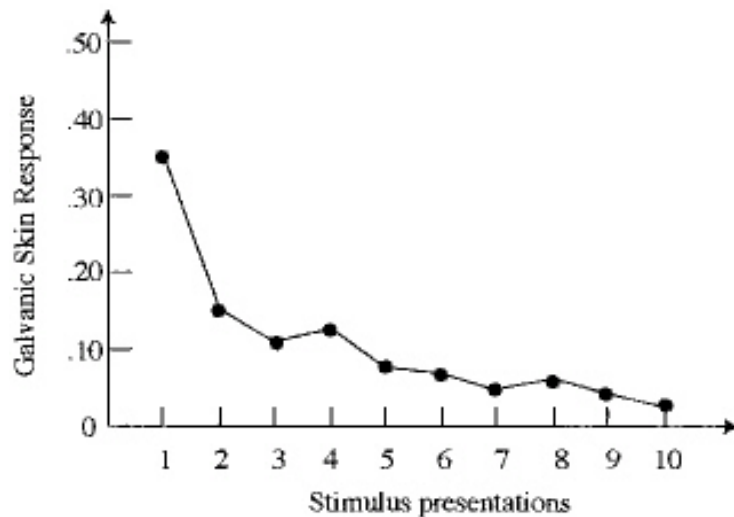
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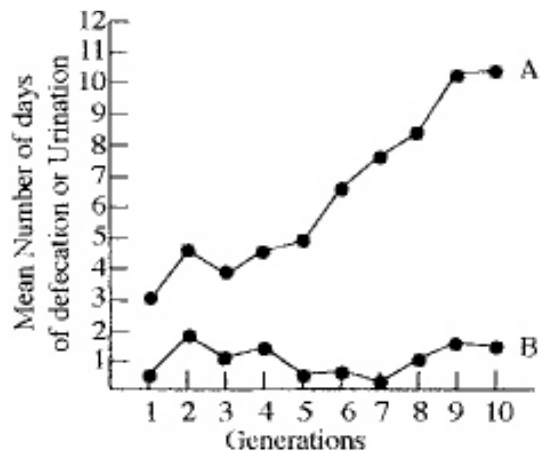
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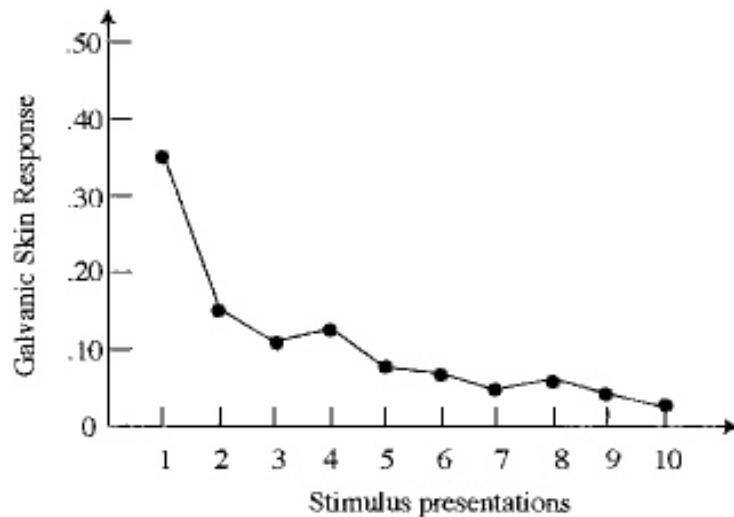
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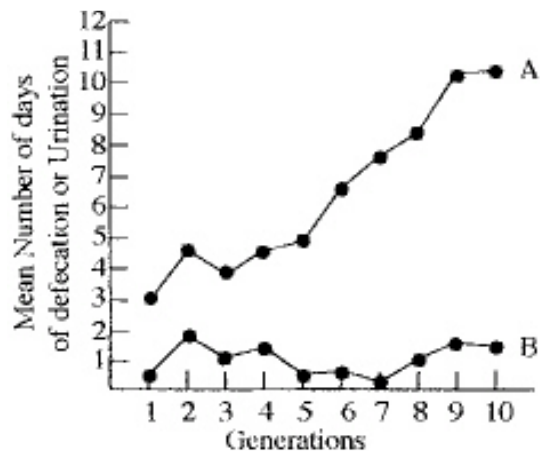
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66. Explain the role of mutations in evolution.

The answer should indicate that mutations provide new variations which, if adaptive, will be selected.

67. Why is natural selection helpful to species, but not to individuals?

This point is covered in the query on p. 22 of the text. Students should note that natural selection produces changes across generations, not within a given individual.

68. How are reflexes, modal action patterns, and general behavior traits alike? How are they different?

This question appears as item 13 in the list of review questions. Answers should note that all three are "hard wired" or "programmed" into the genes, and differ chiefly in the degree to which they vary and in the degree to which they are elicited by specific environmental events. For example, reflexes are less variable than inherited behavior traits, with fixed action patterns falling between the two.

69. The phrase "survival of the fittest" is often interpreted to mean that natural selection is the result of a kind of combat. What would be a more accurate interpretation of the phrase?

This question is hinted at in review question number 4 about the field mouse. The "fittest" individuals are those most likely to produce young that survive and reproduce. Survival of the fittest does not mean survival of the strongest or most savage, but those most likely to produce offspring that reach reproductive age.

70. What was Bertrand Russell's point when he noted that it is philosophers, not protozoans, who assure us that humans are superior to other animals.

This question refers to the box on page 29. Russell was suggesting that judgment about the superiority of a particular species must necessarily be made from the biased perspective of the species making the judgment. Through the eyes of a baboon, the baboon might be the highest form of animal life.