

The response to selection is best described as:

- a) V_A/V_P b) V_G/V_P c) $X - X_S$ *d) $X_S - X_O$ e) h^2s

For which of the following finch traits were subject to selection? (Significant values are in bold)

weight	0.74	0.48
wing length	0.72	0.44
tarsus length	0.43	0.01
bill length	0.54	0.14
bill depth	0.63	0.53
bill width	0.53	0.45

- a) all traits *b) weight, wing length, bill depth, bill width c) weight, wing length, bill depth
d) weight, wing length, tarsus length, bill depth e) bill length, bill width

Which of the following figures represents a positive genetic correlation due to pleiotropy?

Which of the following traits is likely to be an adaptation?

- a) the green color of insect blood
*b) the cryptic downy plumage of grouse chicks
c) differences in the spotting patterns of giraffe species
d) the amount of repetitive DNA in the genome
e) none of the above

In swordtail fish, females of most species prefer males with a long sword. In the related genus of platyfish, males lack swords, but females of some species prefer males that have been given an artificial sword. Which of the following swordtail/platyfish phylogenies is consistent with sensory bias evolution of the male sword?

- a) I b) II c) III d) IV

Which of the following is not a direct benefit of female choice?

- a) nuptial gift
b) paternal care of offspring
c) territories
*d) fertilization success
e) disease resistance

What is not a feature of male traits associated with indirect benefits?

- a) condition-dependent
b) high heritability
c) costly to produce
*d) age-dependent
e) male-limited expression

What is required for the evolution of altruistic behavior?

- a) direct fitness >> indirect fitness

- b) direct fitness >> inclusive fitness
- c) indirect fitness >> direct fitness
- *d) inclusive fitness >> direct fitness
- e) inclusive fitness >> indirect fitness

The biological species concept applies best to

- *a) species that are sexually reproducing
- b) species that are diploid
- c) species that have overlapping geographic ranges
- d) species that have arisen in allopatry
- e) species that have isolating mechanisms

Manikins are small birds that occur in the rainforests of Central America. Each species is geographically restricted in distribution, occurring on either the Pacific side (P) or Caribbean side (C) of the central mountain range. Which of the following manikin phylogenies indicates that speciation has occurred by vicariance?

In the equation: $rb - c > 0$, what does r represent?

- a) the relationship between direct and indirect fitness
- b) the relationship between the benefit of the action and its cost
- c) the relationship between the individual expressing the behavior and the individual who is the target of the behavior
- *d) the relationship between the inclusive fitness of the individual expressing the behavior and the individual who is the target of the behavior
- e) the number of repeated interactions between the individual expressing the behavior and the individual who is the target of the behavior

Short Answer

- What is required for sperm competition?
- What is a correlated response to selection?
- What is required for the evolution of reciprocal altruism?
- What is dominance variance?
- What is the comparative method?