

Problem Set #4.

Chapter 5, #1,2,6,8,13,16

1. A striking exception to the rule that mutation rates per base pair are similarly low in most organisms, HIV has a mutation rate (per base pair) that is orders of magnitudes higher. Provide an evolutionary explanation for this observation (why might a high mutation rate be advantageous?).

2. Cite two types of evidence in support of the idea that genetic variation is usually abundant in natural populations.

3. Some artificial selection experiments fail to show a response to selection after 20-30 generations. What do you conclude about the contribution of new mutations to the generation of a selective response in these cases?

4. Cite specific evidence that the recombination rate in organisms evolves under selection like any other trait.