

Hardy-Weinberg Practice 2

1. In a population of 200 mice, 98 are homozygous dominant for brown coat color (BB), 84 are heterozygous (Bb), and 18 are heterozygous recessive (bb).

a. The allele frequencies of this population are: B allele= _____ b allele= _____

b. The genotype frequencies of this population are:

_____ BB _____ Bb _____ bb

2. The allele frequencies in a population are $A = 0.6$ and $a = 0.4$. Predict the genotype frequencies for the next generation.

AA = _____ Aa = _____ aa = _____

3. Suppose one gene locus determines stripe patterns in skunks. SS skunks have two broad stripes; Ss skunks have two narrow stripes; and ss skunks have white specks down their backs. A sampling of a population of skunks found 65 broad-striped skunks, 14 narrow-striped skunks, and 1 speckled skunk. Determine the allele frequencies.

S = _____ s = _____

4. You collect 100 samples from a large butterfly population. Fifty specimens are dark brown, 20 are speckled, and 30 are white. Coloration in this species is controlled by one gene locus: BB individuals are brown, Bb are speckled, and bb are white. What are the allele frequencies for the coloration gene in this population? What are the genotype frequencies?

B =_____ b =_____

BB =_____ Bb =_____ bb =_____

5. Of the members of a population of pea plants, 16% are short (recessive). What are the frequencies of the recessive allele t and the dominant allele T ? What are the genotype frequencies in this population?

T =_____ t =_____

TT =_____ Tt =_____ tt =_____

6. 4% of a human population are recessive for non-tongue rolling (rr). In a sample of 2000 individuals, how many individuals can roll their tongues? How many tongue rollers are heterozygotes for tongue rolling?

Tongue Rollers = _____

Heterozygotes = _____