

Hardy-Weinberg problem set

Hardy-Weinberg Theorem states that if a population is NOT evolving then the frequencies of the alleles in the population will remain stable across generations - it is in equilibrium.

We can use the Hardy-Weinberg equation to make predictions about the relative frequency of the different alleles (as well as the associated genotypes), even if there is population growth, as long as the five conditions we discussed in class hold true. Think about what those five conditions are.....

no mutations, no natural selection, no gene flow, large population size, random mating

Alternatively, Hardy-Weinberg equation can be a means to determine if a population is indeed evolving - that the allele frequencies are changing and therefore NOT at equilibrium.

The trick to using the Hardy-Weinberg equation to help evaluate the frequency of a particular allele frequency at time X, or to make a prediction about the frequency of a particular genotype/phenotype in future generations, is to go through the math in a step-by-step manner.

For the problems below assume all genes have only two alleles and there is a simple dominant recessive relationship.
