Hardy-Weinberg Equilibrium

BASIC TERMINOLOGY

Gene Pool:

Phenotype Frequency:

Allele Frequency:

H-W STATEMENT:

* the frequency of [\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_](http://www.phschool.com/science/biology_place/glossary/a.html) and \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ in a population will remain constant

from generation to generation if the population is \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ and in

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.

5 REQUIRED CONDITIONS

 1: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

 Genetic drift:

 Bottleneck:

 Founder Effect

 2: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

 3: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

 4: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

 5: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

What to know…

In the gene pool,

P = \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Q = \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Therefore, P + Q = \_\_\_\_\_

H-W Punnett square:

f(A) = \_\_\_\_\_

f(a) = \_\_\_\_\_

f(AA) = \_\_\_\_\_

f(Aa) = \_\_\_\_\_

f(aa) = \_\_\_\_\_

THE HARDY-WIENBERG EQUATION EXPANSION:

The FINAL formula: P2 + 2PQ + Q2 = 1

Simple Application Example: