

## HARDY-WEINBERG Practice Problems

1. The ability to curl the tongue is dominant to not being able to. If 86% of Dalhousie's population can curl their tongue, calculate the percentage of the population that would have the genotype Cc.
2. A recessive genetic disorder occurs in 7% of a population of mice. What percentage of the population is homozygous for the normal condition?
3. In cattle, solid coat is dominant to an irregular white spotted pattern. A rancher wants to know the genotypic makeup of his herd. A study of DNA samples from the animals shows that 75% of the alleles are the dominant version. Calculate the proportions of the 3 genotypes in his population.
4. In the speckled moth, speckled wings is dominant to black. Before the industrial revolution, 96% of the speckled moth population of England had white wings with black specks; only 4% had all black wings.

After pollution from the industrial revolution blackened the tree trunks, 12% of the moth population had white wings with black specks; 88% had black wings.

Calculate the genotypes of the speckled moth population before and after the industrial revolution. Account for the change in the genotype?

### Answers:

1. 47% Cc
2. 55%
3. 56% WW, 38% Ww, 6% ww
4. Before... 64%, 32%, 4%  
After... 0.4%, 11.3%, 88.4%  
The population has evolved!