Monohybrid Practice Problems:

1. Brown eyes are dominant to blue eyes. A man with blue eyes marries a brown-eyed woman whose mother had blue eyes. Give the genotypic and phenotypic ratios of their children.
2. In guinea pigs, a black coat is dominant to a white coat. Using Punnett squares, show a cross that would determine whether a pig with black coat is homozygous or heterozygous. (hint: with whom would you cross the animal to show if any recessive alleles are in the black pig’s genotype?)
3. The gene for long eyelashes is dominant to short eyelashes. Can parents with long eyelashes have a child with short eyelashes? Illustrate your answer with a Punnett square.
4. The light color variation in the peppered moth is a recessive trait. A light moth is crossed with a dark moth. Some of the offspring came out dark, while others were light. What were the genotypes of the original parents?