1. A homozygous yellow pea plant is crossed with a homozygous green pea plant, Yellow is the dominant trait for pea plants:

A) Key:

B) Genotype of yellow pea plant: ____________

C) Genotype of green pea plant: ____________

D) Draw the Punnett square of the cross

E) What percentage of the offspring will be yellow? ____________

2. In people, freckles are dominant over not having freckles, it is an autosomal trait. Two people who are both heterozygous for freckles get married.

A) Key:

B) Genotype of the husband: ____________

C) Genotype of the wife: ____________

D) Draw a Punnett square of the cross between the two people.

E) What is the probability that they will produce an offspring that has freckles? _______
3. Brown eyes are dominant over blue eyes, it is an autosomal trait. A brown-eyed couple gets married, the husband is homozygous for brown eyes and the wife is heterozygous.

A) Key:

B) Genotype of the husband: __________
   Genotype of the wife: __________

C) Draw a Punnett square of the cross between the two people.

D) What is the probability that the couple will have a child with blue eyes?

4. Cystic fibrosis has been found to be inherited through a recessive autosomal allele. A man with cystic fibrosis marries a woman who does not have cystic fibrosis, but her mother had the disease.

A) Key:

B) Genotype of the wife: __________

C) Genotype of the husband: __________

D) Draw a Punnett square of the cross between the two people.

B) What is the probability that their next child would be expected to have the disease?
   __________
5. What are the possible genotypes of the children if the mother has Type B blood and the father has type O blood? (Draw a Punnett square to verify your answer, you may need more than one Punnett square.)

A) Genotype (or genotypes) of the mother: ____________
B) Genotype of the father: ____________
C) Draw a Punnett square(s) of the cross between the two people.

6. A mother has blood type O, her child is type O. She claims a man of type AB is the father. Could he be? _________________ Draw a Punnett Square of the cross.

Could a man of type A, type B, or type O be the father? _______________.
Draw the punnett squares of the crosses
7. Sickle cell anemia is an autosomal recessive disease. A couple comes to you for advice. Both of their fathers had sickle cell anemia but neither the husband nor the wife have the disease.

A) Key:

B) Genotype of the couple: __________
C) Draw a Punnett square of the cross between the two people.

D) What is the probability that their child will have the disease ________________
E) What is the probability that their child will be a carrier for the disease. __________

8. Red-green color blindness is due to a sex-linked recessive allele on the X chromosome. Two normal visioned parents produce a color-blind son.

A) Key:

B) Genotype of the wife: __________
C) Genotype of the husband: __________

D) Draw a Punnett square of the cross between the two people.

E) What is the probability that their next child will be color blind? __________
9. Huntingtons disease is a dominant autosomal disease. What is the probability that a couple will have a child that will develop huntingtons if the husband is heterozygous for Huntingtons and the wife is homozygous recessive.

A) Key:

B) Genotype of the wife: ____________

C) Genotype of the husband: ____________

D) Draw a Punnett square of the cross between the two people.

E) What is the probability that a couple will have a child that will develop huntingtons? ____________