Name: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Pd: \_\_\_\_\_\_\_\_

**Heredity Practice Problems**

1. In humans, being albino is a recessive trait. “Not albino” is dominant. If an albino man and a heterozygous woman have a child, what are the chances that their child will be albino?

a

a

Albino man: aa  
Woman: Aa  
  
Chance of an albino  
child=50%

aa

aa

Aa

Aa

A

a

1. In roses, red is dominant and white is recessive. You cross two heterozygous plants.  
   🡪What are the phenotypes of the parents? **Parents are both red**  
     
   🡪Find the genotypic and phenotypic ratios for the F1 generation.  
     
   Genotypic ratios:  
   ¼ RR, ½ Rr, ¼ rr  
   Phenotypic ratios:  
   ¾ red, ¼ white

rr

Rr

Rr

RR

R

r

r

R

1. In one species of tropical birds, blue feathers are dominant and red feathers are recessive. A blue-feathered male and a red-feathered female mate, and one of their offspring has red feathers. What is the genotype of the blue-feathered father?
2. **Father must be heterozygous (Bb). The mother must be homozygous recessive because she expresses a recessive trait. If she has an offspring that is also homozygous recessive, and the father is not expressing a recessive trait, then the father can only be heterozygous.**
3. In humans, sickle cell anemia is a recessive disorder. A healthy man and a woman who has sickle cell anemia have children. Their first child is diagnosed with sickle cell anemia. What are the chances that the next child will be diagnosed with sickle cell anemia?

Chances of a child with sickle cell:

aa

Aa

a

a

A

50%

a

aa

Aa