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

**Heredity Practice #2**

1. II.2 and II.3 are planning to have children. II.1 passed away from cystic fibrosis, a recessive genetic disorder, when he was a young child. Neither I.1 nor I.2 had CF. I.4 was a carrier of cystic fibrosis and that his mother was not a carrier and did not have CF.   
   A) What is the probability that both II.2 and II.3 are carriers of CF?  
     
   B) What is the probability II.4 is not a carrier of CF?  
     
   C) If both II.2 and II.3 are carriers, what is the probability that their first child will not be a carrier of CF?

1. Robert and Christina have 2 daughters and 1 son. Robert’s parents have 1 daughter in addition to their son Robert. Christina’s parents have three sons in addition to their daughter Christina. Draw a pedigree of this family in the space below.
2. Use the pedigree from #2 for these questions:  
   A) Albinism (being albino) is a recessive disorder. Neither Robert nor Christina is albino. Robert and Christina’s oldest daughter is albino. Robert’s father is albino. Robert’s mother is homozygous dominant for albinism. Christina’s father is homozygous dominant for albinism. Use this information to shade in your pedigree appropriately.  
   B) Provide genotypes for the following individuals:  
   Robert: \_\_\_\_\_\_\_\_\_\_\_ Christina: \_\_\_\_\_\_\_\_\_\_\_  
   Robert’s sister: \_\_\_\_\_\_\_\_\_\_\_ Christina’s mother: \_\_\_\_\_\_\_\_\_\_  
   Robert’s father: \_\_\_\_\_\_\_\_\_\_ Christina’s father: \_\_\_\_\_\_\_\_\_\_\_  
   C) What is the probability that Robert and Christina’s next child will be both male and albino?
3. Use the pedigree below to answer the questions. This pedigree shows the inheritance of a trait called brachydactyly, which means that an individual’s fingers and toes are unusually short.   
     
   A) Is brachydactyly dominant or recessive? How can you tell?  
     
     
   B) Provide genotypes for the following individuals. For some individuals there may be two possible genotypes.  
   I. 3 \_\_\_\_\_\_\_\_\_\_ I. 4 \_\_\_\_\_\_\_\_\_ II.1 \_\_\_\_\_\_\_\_\_\_ II.2 \_\_\_\_\_\_\_\_\_\_ II.3 \_\_\_\_\_\_\_\_\_\_ III.3 \_\_\_\_\_\_\_\_\_\_\_  
     
   C) If III.2 is heterozygous for brachydactyly, what is the probability that her first child with III.3 will have brachydactyly?