Genetic Crosses

1. a) Brown eye colour is **dominant.** If a woman is **homozygous** for brown eyes, what is her **genotype** going to be? **(BB, Bb or bb)**

   b) Blue eye colour is recessive on the same Allele as Brown eyes. If a man has blue eyes, he must be **homozygous**. What is his genotype? **(BB, Bb or bb)**

   c) The woman from part a, and the man from part b have a child. Fill in this punnett square. In the grey squares you should put the Alleles of the mother and father.

	Mother		
Father			

   d) What is the fraction (__/4) of Brown eyed children?

   e) What is the ratio? _____

2. A flower arranger is growing some flowers in a garden. He has seeds for red, and seeds for pink plants. Both colours are found on the same allele as each other. **Red is the dominant colour, while pink is recessive**.

   a) Using the letter R, what are the possible Genotypes for the **red** coloured flower?
   _____

   b) What is the genotype for the **pink** flower? _____

   c) The man crosses homozygous dominant red flowers RR with homozygous pink flowers rr. Draw a punnet square of the results?

	Red		
Pink			

Probability of red flowers is _____ %

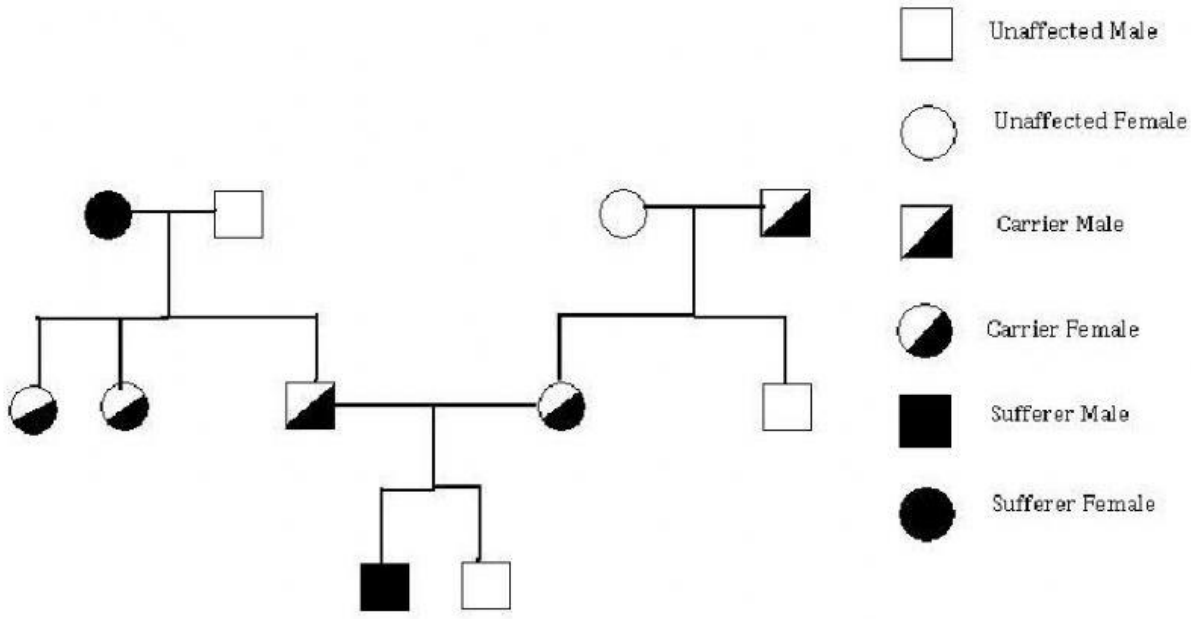
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4. Susan is a carrier of sickle cell disease. She is married to Ivan who is also a carrier. Susan's father, Stewart, was also a carrier of the disease, but her mother, Ruth, did not. Susan has a brother called James who is not a carrier.

Ivan has two sisters who are also carriers. His mother Rachel suffers from the disease but his father Richard does not.

Susan and Ivan have two sons. Jack has sickle cell disease, but his brother, Robert, does not.

Put the names of the family onto the pedigree chart below.



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