Genetic Diagrams

1. Using the symbols **N** for normal wings, and **n** for vestigial wings, write down the following:
2. genotype of a fly which is heterozygous for this characteristic ……………………………………………………. [1]
3. possible genotypes of its gametes ………………………………. and ……………………………………… [1]
4. Using a complete genetic diagram, work out what kind of offspring would be produced if the heterozygous fly in question **1** mated with one which was homozygous for normal wings. [2]
5. In humans, the allele for red hair, b, is recessive to the allele for brown hair, B. A man and his wife both have brown hair. They have five children of whom have red hair, while two have brown hair. Explain how this could may happen, using a genetic diagram to explain your answer. [3]
6. In Dalmatian dogs, the allele for black spots is dominant to the allele for liver spots. If a breeder has a black-spotted dog, how can she find out whether it is homozygous or heterozygous for this characteristic? Use genetic diagrams to explain your answer. [3]