**U6#2—Mixed Inheritance Problems**

1. In northeast Kansas there is a creature known as a wildcat. It comes in three colors, blue, red, and purple. This trait is controlled by a single locus gene with incomplete dominance. A homozygous (BB) individual is blue, a homozygous (RR) individual is red, and a heterozygous (BR) individual is purple. What would be the genotypes and phenotypes of the offspring if a blue wildcat were crossed with a red one?
2. A common phenotype used in question about codominance is roan fur in cattle. Cattle can be red (RR= all red hairs) white (R’R’= all white hairs), or roan (RR’= red & white hairs together. What would be the phenotypic ratio of a cross between a roan cow and a red cow?
3. Hemophilia is a disease that is recessive X-linked disorder. If the father is healthy and the mother is heterozygous for the trait, what is the possibility that the children will be carriers? Are the carriers male or female? Is this always the case?
4. Color blindness is a recessive X-linked disorder. What would be the phenotypic ratio of the F1 be from the cross of a regular sighted male and a heterozygous female?
5. Predict the blood types of the offspring from a man with type AB blood and a woman with type O.
6. A couple has a child with type AB blood. List the possible genotype combination of the parents. Use Punnett squares to demonstrate these combinations.

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