CHAPTER 17	Incomplete Dominance and Co-dominance Worksheet	BLM 17.1.11
HANDOUT		

Answer the following questions. Use a Punnett square to illustrate your answer as required.

1. A white flowering, true breeding four-o'clock plant (*Mirabilis jalapa*) is crossed with a true breeding, red flowering plant of the same species. The result of this cross is an F_1 generation of all pink flowers. What form of dominance does this plant exhibit? What is the genotype of the F_1 offspring? The F_1 offspring are then crossed to produce an F_2 generation. Draw a Punnett square illustrating this cross and determine the resulting phenotype ratio.

2. A horse breeder near Calgary breeds a black mare and a white stallion. She is hoping that the offspring will have a roan coat of mixed black and white hairs. What mode of inheritance would result in this outcome?

_____

3. Use Punnett squares to explain your answers where appropriate.

   a) A man with has sickle cell disease marries a woman with the sickle cell trait. Can they have a child without sickle cell?

   b) What is the chance that they will have a child with sickle cell disease?

Incomplete Dominance and Co-dominance Worksheet

c) If the family lives in a part of Africa that is endemic for malaria, which genotype would provide a heterozygote advantage? Explain.

_____

_____

_____

_____

d) The man remarries a woman who does not carry the sickle cell allele. What is the chance that they will have a child with the disease?