PCB BIO 4 ASSIGNMENT SHEET 14:NOVEMBER 30-DECEMBER 4, 2009
Reading, Preparation, Study Questions, Practice Essays, Labs.

ASSIGNMENT	DESCRIPTION
MONDAY	Mendel's Laws 9.2 Explain why Mendel's decision to work with peas was a good choice. Define and distinguish among true-breeding organisms, hybrids, the P generation, the F1 generation, and the F2 generation. 9.3 Define and distinguish between the following pairs of terms: genotype versus phenotype, dominant allele versus recessive allele, and heterozygous versus homozygous. Also define a monohybrid cross and a Punnett square. 9.3 Explain how Mendel's law of segregation describes the inheritance of a single characteristic. 9.4 Describe the genetic relationship between homologous chromosomes. 9.5 Explain how Mendel's law of independent assortment applies to a dihybrid cross. Illustrate this law with examples from Labrador retrievers and Mendel's work with peas. 9.6 Explain how a testcross is performed to determine the genotype of an organism. 9.7 Explain how and when the rule of multiplication and the rule of addition should be used to determine the probability of an event. Explain why Mendel was wise to use large sample sizes in his studies.
TUESDAY	9.8 Explain how family pedigrees can help determine the inheritance of many human traits. 9.9 Explain how recessive and dominant disorders are inherited. Provide examples of each. 9.10 Compare the health risks, advantages, and disadvantages of the following forms of fetal testing: amniocentesis, chorionic villus sampling, and ultrasound imaging. Describe the ethical dilemmas created by advances in biotechnology. Variations on Mendel's Laws 9.11–9.15 Describe the inheritance patterns of incomplete dominance, multiple alleles, pleiotropy, and polygenic inheritance. 9.16 Explain why human skin coloration is not sufficiently explained by polygenic inheritance. 9.17 Describe the limits, benefits, and ethical challenges of genetic testing.
WEDNESDAY	The Chromosomal Basis of Inheritance 9.18 Define the chromosome theory of inheritance. Explain the chromosomal basis of the laws of segregation and independent assortment. 9.19 Explain how linked genes are inherited differently from nonlinked genes. 9.20 Describe T. H. Morgan's studies of crossing over. 9.21 Explain how Sturtevant created gene maps. Sex Chromosomes and Sex-Linked Genes 9.22 Explain how sex is genetically determined in humans and the significance of the SRY gene. Compare the sex determination system in humans to those in fruit flies, grasshoppers, birds, and bees. 9.23–9.24 Describe the patterns of sex-linked inheritance, noting examples in fruit flies and humans.
THURSDAY	Complete the practice problems I gave you.
FRIDAY	There will be a Chapter 9 exam on Tuesday December 8, 2009.