

**Exam II review Sheet**

- Exams in this class ask you to demonstrate your knowledge of the subject matter that we have been discussing in class and you have been working on by going over the material and doing practice problems.
- The exam will consist of short answer questions and problems similar to the suggested problems/homework. None of the problems will be a surprise. They are all similar to things you have already worked on. *If you have prepared for the exam, the 55 minutes provided will be ample time to finish the exam. If you are not prepared, you may not finish the exam.*
- The practice exam questions have come from previous exams. They are good practice questions.
- This is not an exhaustive review sheet. It only outlines ideas that you should be familiar with.
- The best way to prepare is:
  - Do and understand all of the suggested problems in the book (this is especially important)
  - Do and understand the homework assignment
  - Do and understand questions from the old exam
  - Understand the concepts listed below

\*Do not memorize all of the human example cases that we looked at over the past few weeks. All the information regarding a particular human trait/disorder will be given as part of the exam question.

**You should be able to work the following types of problems:**

- Multiple alleles
- Epistasis
- Complementation tests
- Pedigree analysis
- Recombination
  - Be able to determine recombination frequencies from two and three point mapping crosses
  - Given a recombination frequency between two genes, be able to determine the expected number of progeny
  - Interference and how to calculate it
  - Why two point mapping crosses underestimate distance
  - Determine Gene order and distances with a three point test cross

**You should be familiar with the following concepts:**

- Penetrance
- Expressivity
- Epistasis
- Temperature Sensitive Alleles
- Variable expressivity due to genetic background effects
- Clinical heterogeneity due to multiple alleles
- Lethality
- Germ Line Mosaicism
- Autosomal dominant inheritance
- Autosomal recessive inheritance
- X-linked recessive inheritance
- X-linked dominant inheritance
- Map Distance and Recombination