

# Bio Final Review

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May 28, 2018

## 1 General Information

For this, see the google doc.

## 2 Genetics

### 2.1 Sex-linked genes

These are genes located on the sex chromosomes. They will show different phenotype frequencies based on gender.

- (1) Gene A is on the X chromosome. A is the wild type, and  $\alpha$  is the diseased type.  
 $X^A X^\alpha \times X^A Y$ :

$$\begin{array}{c|c} X^A Y & X^\alpha Y \\ \hline X^A X^A & X^\alpha X^A \end{array}$$

### 2.2 Pedigrees

- = Unaffected Female
- = Affected Female
- = Unaffected Male
- = Affected Male

Connecting lines on pedigrees work just as they do on family trees. Relatively simple logic can be used to determine the genotypes of each member of the pedigree; however, some can be more difficult than others. My general method is to use the “method of staring” in the words of Mr. Letarte.

### 2.3 Genetic Disorders – Sickle Cell, Cystic Fibrosis, Huntington’s

### 2.4 Nondisjunction

### 2.5 Recombinant DNA – Restriction Enzymes, Ligase, Electrophoresis, GFP, PCR, Selectable Markers, Screens, Plasmids, Transformations

### 2.6 Selective Breeding – Hybridization vs Inbreeding

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