**Pedigree Analysis Notes**

**\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ of Pedigree Analysis**

1. Determine the mode of \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_: dominant,

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_, partial dominance,

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_, autosomal, mitochondrial, maternal effect.

2. Determine the \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ of an affected offspring for a given cross.

**Pedigree Analysis is a Key Tool in Human Genetics**



* Analyzing a pedigree is like \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ - building – you try assigning

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ genotypes until the pieces fit.

**Pedigrees: Basic rules**



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* People who have children together are connected by a \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ line.
* Their children are connected to them with a \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ line.
* Each generation is assigned a \_\_\_\_\_\_\_\_\_\_\_\_ numeral, beginning with the earliest
	+ Examples: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
* Individuals w/in \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ are assigned \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ numerals, beginning with the left.
	+ Examples:\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_



**Patterns of dominant traits**

* Trait \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ to appear \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ generation
* About equal \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ between \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ males and affected

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.

* At least one \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ must be affected in order for \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ to be affected
	+ Aa x aa
* Normal parents will always produce \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ offspring.
	+ aa x aa ---> aa

**Autosomal Dominant Pedigree**



**Patterns of recessive traits**

* may appear to “\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_” generations
* About \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ ratio between affected males and affected females
* \_\_\_\_\_\_\_\_\_\_\_\_\_ children of normal and affected parents are \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.
	+ AA x aa ---> Aa
* \_\_\_\_\_\_\_\_\_\_\_\_\_ children of two affected parents will be affected
	+ aa x aa ---> aa
* normal parents \_\_\_\_\_\_\_\_\_\_\_\_\_\_ produce affected offspring
	+ Aa x Aa ---> 3/4 normal; 1/4 affected



**Autosomal Recessive Pedigree**



**X-Linked Recessive**

* \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ males affected than \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
* Males get their \_\_\_\_\_\_\_\_\_\_ from their mother and \_\_\_\_\_\_\_\_\_ from their father.
* Females get one \_\_\_\_\_\_\_ from mom and one \_\_\_\_\_\_\_\_\_ from dad.
* Trait \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ in males if present.
* Recessive in females and are \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_



**Sum it up!**

**Autosomal Dominant**

* Males and Females
* Every generation

**Autosomal Recessive**

* Males and Females
* Skips generations

**X-linked Recessive**

* More males than females