# Cheatography

# AP Biology Unit 7: Genetics Cheat Sheet by hlewsey via cheatography.com/36676/cs/11720/

Meiosis	
Interphase	chromosome chromosome
	2n DNA is copied
Prophase I	Chromosomes pair up
	Recombination occurs
Metaphase I	Chromosomes line up at equator
	meiotic spindle
Anaphase I	Chromosomes pulled apart
Telophase I & Cytokinesis	Cell pinches in the middle
Prophase II	Two daughter cells
Metaphase II	Chromosomes line up at equator
Anaphase II	Sister chromatids pulled apart
Telophase II & Cytokinesis	Cell pinches in the middle
2	V V V
	Four granddaughter cells
	n - haploid 2n - diploid

Mutations	
mutation	genetic or chromosomal (deletion, inversion, translocation, polyploidy) abnormality
karyotype	diagram that shows size, #, & shape of chromosomes
nondisjun ction	failed separation of homologous chromosomes→ aneuploidy(trisomy, polyploidy

## **Chromosome Mutations**





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### Mendelian Laws

#### Law of Dominance

offspring of 2 organisms that are
homozygous for 2 opposing traits will be
hybrid but will only exhibit the dominant trait
and not the recessive trait

#### Law of Segregation

during formation of gametes, the 2 traits carried by each parent will separate

#### Law of Independent Assortment

alleles of a gene for one trait segregate independently from alleles of a gene for another trait (applies w/dihybrid cross)

Genes	
linked	genes on the same chromosome
sex- linked	traits carried on X chromosome
linkage mapping	† distance between genes on chromosome= † chance of separation by crossing over
recombin ation frequency	=total recombinants/total # offspring x100
pedigree	used to determine how traits are inherited
Barr body	inactivated X chromosome in each female mammal's somatic cell→ genetic mosaic

#### Types of Crosses

monohybrid cross	Tt x Tt; phenotype ratio=3:1; genotype ratio=1:2:1
testcross	B/x b/b to determine B/'s genotype
dihybrid cross	TtYy x TtYy; can produce 4 types of gametes & phenotype ratio=9:3:3:1

# **Dihybrid Cross**

	AB	Ab	aB	ab
AB	AABB	AABb	AaBB	AaBb
Ab	AABb	AAbb	AaBb	Aabb
aB	AaBB	AaBb	aaBB	aaBb
ab	AaBb	Aabb	aaBb	aabb

Types of Inheritance		
incomplete dominance	hybrids show blending of traits	
codominance	hybrids show both traits	
multiple alleles	more than 2 allelic forms	
pleiotropy	1 gene affects an organism in several/many ways	
epistasis	2 genes, 1 trait; 1 masks expression of the other	
polygenic	blending of several genes that vary along a continuum	

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