#_____

Notes: Exceptions to Mendelian Genetics (Describe and give an example for each exception)

1. **Incomplete Dominance:**

The heterozygous phenotype is a blend (mixing paint) of the two homozygous phenotypes.

Example:

RR = Red
WW = white
RW = pink

	R	R
W	RW	RW
W	RW	RW

all offspring pink

4 o'clock flower

2. **Co-Dominance:**

Both homozygous phenotypes are displayed in the heterozygous phenotypes

Examples:

Blood type

Red & white cow crossed = red & white spotted cow (roan cow)

3. **Multiple Alleles**

More than 2 possible forms of a gene

Examples:

Blood type → I^A, I^B, i (O type)
Eye color
Hair color

4. **Polygenic Traits (or epistasis)**

Traits controlled by more than one gene.

Examples:

High blood pressure, skin color, labrador retriever coat color

AaBb = Black
Aabb = Brown
aaBB = Yellow

5. Sex-linked traits

Genes located on the X or Y sex chromosomes, so the chance of inheritance is different based on sex (male or female)

Examples:

Color-blindness, muscular dystrophy, mom male pattern baldness

6. Traits affected by the environment

Traits are affected by genetics AND environment

dad

	X^B	X^b
X^B	X^BX^B	X^BX^b
Y	X^BY	X^bY

b = baldness

Examples:

Heart disease, Diabetes
Hydrangea color
Height
Freckles, hair color, skin color, etc.

7. Linked Genes

Thomas Hunt Morgan

– Traits which are likely to be inherited together because they are close together on the same chromosome.

Examples:

Ear & nose size (from lab)