Genetics and inheritance Study guide

# Use as many academic vocabulary words from our unit to explain the following bolded concepts:

# **Crossing Over Protein Synthesis Inheritance of Traits Autosomal/ Sex linked Diseases**

DNA

Nucleus

Meiosis

Crossing Over

Homologous

Haploid

Diploid

Gene

Mutation

Phenotype

Diseases

Chromosomes

RNA

Protein

Amino Acid

Transcription

Translation

Codon

Nucleotide

Protein Synthesis

Genotype

Chromosomal Abnormality

Homozygous

Heterozygous

Recessive

Alleles

Complete dominance

Incomplete dominance

Co dominance

Punnett Square/ Dihybrid Cross

Autosomal Inheritance

Sex linked Inheritance

Meiotic error

# Also be sure to know how to perform several practice problems. Look to the quizzes, our Punnett Squares practice packet and our notes for practice problems Here are two examples.

PTC-taster- TT, Tt Un-Attached earlobes- EE, Ee Can roll tongue- RR, Rr

Non-PTC taster – tt Attached earlobes – ee Can’t roll tongue - rr

Hitchhikers thumb- HH, Hh Straight pinky- PP, Pp

Straight thumb – hh Bent pinky- pp

Hair on mid-digit – MM, Mm Straight Hairline- WW, Ww

No hair on mid-digit- mm widow’s peak- ww

1. Dohn Joe and Dane Joe want to have children and are thinking about how their children’s’ hair line and tongues will turn out. They are both circus performers and want their children to follow in their footsteps. Their circus only accepts people with a Widow’s Peak and who can roll their tongues. What would their children look like if Dohn is heterozygous for both Widow’s peak and tongue rolling, and Dane is homozygous dominant for Widow’s peak and heterozygous for tongue rolling? (Fill in the Punnett Square and the blanks).

Parents’ genotypes \_\_\_\_\_\_\_\_\_\_\_\_ X \_\_\_\_\_\_\_\_\_\_\_\_

* 1. Widow’s Peak, Tongue Roller
  2. Widow’s Peak, non tongue roller
  3. Straight hair line, Tongue Roller
  4. Straight hair line, non tongue roller
  5. What is the phenotypic ratio?
  6. What are the chances of their child being able to join the circus?

Mrs. Johnson is type “A” and Mr. Johnson is type “O.” They have three children named Matthew,

Mark, and Luke. Mark is type “O,” Matthew is type “A,” and Luke is type “AB.” Based on this

information:

Mr. Johnson must have the genotype \_\_\_\_\_\_

Mrs. Johnson must have the genotype \_\_\_\_\_\_ because \_\_\_\_\_\_\_\_\_\_\_ has blood type \_\_\_\_\_\_

Luke cannot be the child of these parents because neither parent has the allele \_\_\_\_\_.