PS: 2-Trait Practice WS

1. What are all the possible <u>genotype</u> and <u>phenotype</u> fractions for children created from a cross from the following two individuals: Mom is heterozygous for both hitchhiker's thumb and the ability to roll her tongue. Dad is also heterozygous for hitchhiker's thumb, but he cannot roll his tongue.

Gene notation	___ = _____
	___ = _____
Symbols used	___ = _____
	___ = _____
Parent	MOM = _____
Genotypes	DAD = _____
Mom's egg varieties : _____	
Dad's sperm varieties: _____	

<u>Genotypes</u>   <u>Phenotypes</u>

2. Mom and Dad are both heterozygous for long fingers and widow's peak hairlines (widow's peak = forehead hairline that makes a V-shaped point in the middle). What is the fraction chance that any of their children will have **long fingers** and a **straight hairline**? _____

Gene notation	___ = _____
	___ = _____
Symbols used	___ = _____
	___ = _____
Parent	MOM = _____
Genotypes	DAD = _____
Mom's egg varieties : _____	
Dad's sperm varieties: _____	

3. Amy's mother does not have Huntington's Disease, but does have XP. Amy's father does have Huntington's disease and is a carrier for XP. Amy does not have Huntington's disease or XP. What are the odds that her baby brother would have both Huntington's and XP? _____

   i. Amy's Genotype: _____

  ii. Mom's Genotype: _____

 iii. Dad's Genotype: _____

 iv. Mom's Egg Varieties: _____

  v. Dad's Sperm Varieties: _____

4. Austin's parents are completely normal, healthy adults, except they are both heterozygous for Huntington's Disease. However, Austin was born with Cystic Fibrosis (a recessive condition), albinism (also recessive) and they are unsure whether or not Austin has Huntington's.

What are the odds that Austin would have **Huntington's disease** in addition to CF and albinism? _____

   vi. Mom's genotype: _____

  vii. Dad's genotype: _____

 viii. Mom's Egg Varieties: _____

   ix. Dad's Sperm Varieties: _____