Name: _____ Date _____

Class period: _____

Human Mendelian Traits

Mendelian Traits are those traits which follow Mendel's rules of only 2 possible versions (1 dominant, 1 recessive). There are many examples of this in humans.

1. Use the chart below to determine your phenotype (appearance) and possible genotypes (a pair of alleles). Since you cannot do a genetic test right now, if you have the dominant phenotype, you should include both the homozygous and heterozygous genotypes—see the examples on Tongue Rolling on the first row.

Trait	Possible alleles	Your Phenotype	Your Genotype(s)
Tongue Rolling	Able to roll (R) Unable to roll (r)	Ex., able to roll	RR (homozygous) or Rr (heterozygous)
Freckles	Have freckles (F) No freckles (f)		
Widow's peak	Widow's peak (W) Straight (w)		
Earlobe	Free hanging (A) Attached (a)		
Cleft chin	Have cleft (C) No cleft (c)		
Thumb	Hitchhiker's (H) Straight (h)		
Dimples	Dimples (D) No dimples (d)		
Interlocking fingers (when hands are clasped)	Left thumb on top (L) Right thumb on top (l)		
Tongue Tie	Tongue Tie (T) Normal (t)		

2. Did you have mostly dominant or recessive traits? _____

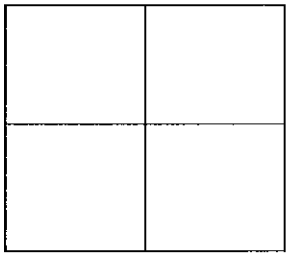
3. Compare your findings with other students.

   a. For which trait where most students dominant?

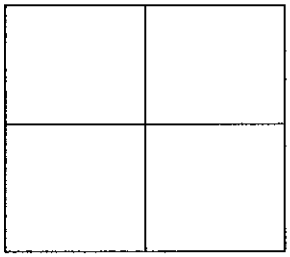
   b. For which trait where most students recessive?

4. First complete the Punnett Square on the right using your own genotype for each trait. If you have both heterozygous and homozygous genotypes for having a dominant trait, choose one to use. The other person's genotype is provided. After completing the Punnett Square, identify possible phenotypes of offspring and the probability of each phenotype in percentage.

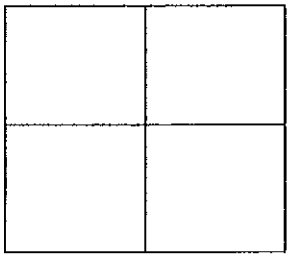
a) Freckle genotypes: Yours ____ & the other person's Ff
List possible Phenotypes % (Probability of inheritance)



b) Tongue rolling genotypes: Yours ____ & the other person's rr
List possible Phenotypes % (Probability of inheritance)



c) Dimple genotypes: Yours ____ & the other person's DD
List possible Phenotypes % (Probability of inheritance)



d) Widow's peak genotypes: Yours ____ & the other person's Ww
List possible Phenotypes % (Probability of inheritance)