

Name: _____ Dr. Reichler's Bio 301M Spring 2009 pre-exam #1 Quiz 2/9

- 1) In snuffalufagi trunk length is coded for by three genes P, D, and Q, an individual that is heterozygous for P and D and homozygous recessive for Q has a really short trunk. If 2 individuals who are both heterozygous for all 3 genes mate, what is the probability that they will have an offspring with a short trunk?

- 2) In snuffalufagi eye color and toe nail color are coded for by 2 different genes on 2 different chromosomes. Brown eye color is dominant to blue eye color, and purple toe nails are dominant to pink toe nails. If a blue eyed, pink toed snuffalufagus mates with a brown eyed, purple toed snuffalufagus, who is heterozygous for both genes. What percent of their offspring will have blue eyes and purple toe nails?

- 3) If a brown eyes and long eyelids are dominant alleles with blue eyes and short eyelids being recessive alleles in snuffalufagi, and a heterozygous snuffalufagus (one parent was homozygous dominant, the other homozygous recessive) with brown eyes and long eyelids mates with a snuffalufagus with blue eyes and short eyelids. Their recombinant offspring would have what traits?

- 4) If liking chocolate is coded for by a gene on the X chromosome with not liking chocolate as the recessive allele, and a woman who dislikes chocolate mates with a man who likes chocolate, and they are having fraternal male/female twins, what is the probability for each of their offspring to like chocolate?

- 5) If a woman has poor ATP production due to a mutation in her mtDNA, and her mate has normal mtDNA, what will be the phenotypes and genotypes of their offspring?

- 6) What about men's genes might explain why men have a shorter lifespan than women?

- 7) What are two differences between sex-linked inheritance and mitochondrial DNA inheritance?

- 8) What are some caveats about using twin studies to determine the nature/nurture component of a trait?

- 9) Could you make your significant other more faithful by injecting them with oxytocin?

- 10) What did the study looking at *in vitro* fertilizations find about the affects of smoking on fetuses?