

PHENYLTHIOCARBAMIDE (PTC) TASTING

1. Fill in the table for PTC (use T and t) :

Phenotype	Possible Genotypes
a.	
b.	

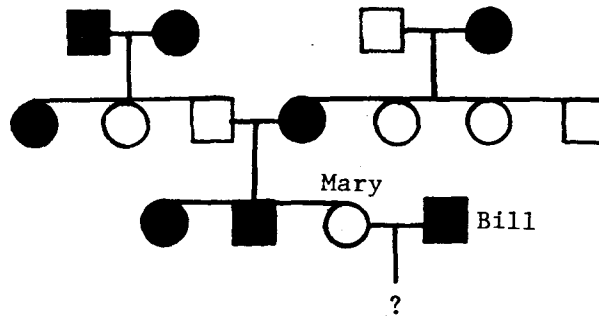
2. Why is the ability to taste PTC considered to be dominant?

3. Which genotype(s) indicate a. a heterozygote? b. a homozygote?

a.

b.

4. Fill in all possible genotypes for each person in the Willis family by writing the letters below each person. (Bill is heterozygous.)(T = dominant t = recessive)



a. What possible genotypes could Mary and Bill's children have?

b. Which phenotypes would be possible for their children?

c. What is the probability that their child will be a taster? a nontaster? (show a Punnett Square for full points)

ALBINISM: Albinism, the absence of pigment, is a recessive trait. People who are albinos are homozygous for the albino gene.

5. Mr. and Mrs. Thomas have two children. Their older son, Mark, has normal pigmentation. Their younger son is an albino. Both Mr. and Mrs. Thomas have normal pigmentation.

a. Draw the family pedigree and show all genotypes. Let "A" stand for normal pigment production and "a" represent the albino gene form.

b. What are the chances that their next child would be an albino? What are the chances that this child would have normal pigment? (show a Punnett Square for full points)

c. Would it be possible for Mark to have a child who is an albino? Explain.

6. List any advantages or disadvantages that albinism might have for an individual.

7. Is it possible to determine if a person with a dominant trait is homozygous or heterozygous? Explain.