

Name: KEY  
Date:

Genetics Review Sheet

1. Define Genetics and Heredity?
2. What is the difference between the dominant and recessive forms of alleles?
3. Define the terms homozygous, heterozygous, genotype and phenotype.

4. Draw Punnett squares for the crosses below. State the ratio of the genotype produced.

AA x aa

	A	A
a	Aa	Aa
a	Aa	Aa

100% heterozygous

Rr x Rr

	R	r
R	RR	Rr
r	Rr	rr

1:2:1  
RR Rr rr

TT x Tt

	T	T
T	TT	Tt
t	Tt	Tt

1:1  
TT Tt

5. In humans, the allele that codes for an ability to taste PTC is dominant (T), and the allele that codes for an inability to taste this chemical is recessive (t). A male who is heterozygous for this trait marries a female who cannot taste PTC.

a. What are the genotypes of the male and female? Male = Tt Female = tt

	T	t
t	Tt	tt
t	Tt	tt

b. Draw a Punnett square to show the possible genotypes of their offspring.

c. What is the predicted percentage of their offspring that will be able to taste PTC?

50% tasters

d. What is the percentage that will not be able to taste PTC?

6. Human eye color is inherited as brown eyes are dominant and blue eyes are recessive. Use Punnett squares to solve the following problems. Pick your own letters to represent eye color traits.

a. A man with blue eyes marries a woman with brown eyes, whose mother had blue eyes. What proportion of the children would be expected to have blue eyes?

Let:

Woman

	B	b
b	Bb	bb
b	Bb	bb

Man

50% blue eyes.