

Assignment Number _____

Name: _____

Hour: _____

Simple Genetics Practice Problems

1. For each genotype, indicate whether it is **heterozygous (HE)** or **homozygous dominant (HO-D)** or **homozygous recessive (HO-R)**

AA _____
Bb _____
Cc _____
Dd _____

Ee _____
ff _____
GG _____
HH _____

li _____
Jj _____
kk _____
LI _____

Mm _____
nn _____
OO _____
Pp _____

2. For each of the genotypes below, determine the **phenotype**.

Purple flowers are dominant to white flowers

PP _____
Pp _____
pp _____

Brown eyes are dominant to blue eyes

BB _____
Bb _____
bb _____

Round seeds are dominant to wrinkled

RR _____
Rr _____
rr _____

Bobtails are recessive (long tails dominant)

TT _____
Tt _____
tt _____

3. For each phenotype, list the **genotypes**.

Straight hair is dominant (S) to curly (s).

_____ straight
_____ straight
_____ curly

Pointed heads are dominant(P) to round heads(p).

_____ pointed
_____ pointed
_____ round

4. Set up the square for each of the crosses listed below. The trait being studied is round seeds (dominant) and wrinkled seeds (recessive)

Rr x rr

What percentage of the offspring will be round?

Rr x Rr

What percentage of the offspring will be round?

RR x Rr

What percentage of the offspring will be round?

Practice with Punnett Squares. Show all work!

5. A TT (tall) plant is crossed with a tt (short plant).

What percentage of the offspring will be tall? _____

6. A Tt plant is crossed with a Tt plant. What percentage of the offspring will be short? _____

7. A heterozygous round seeded plant (Rr) is crossed with a homozygous round seeded plant (RR). What percentage of the offspring will be homozygous (RR)? _____

8. A homozygous round seeded plant is crossed with a homozygous wrinkled seeded plant. What are the genotypes of the parents?

_____ x _____

What percentage of the offspring will also be homozygous? _____

9. In pea plants purple flowers are dominant to white flowers. If two white flowered plants are cross, what percentage of their offspring will be white flowered? _____

10. A white flowered plant is crossed with a plant that is heterozygous for the trait. What percentage of the offspring will have purple flowers? _____