

Name: \_\_\_\_\_  
 HR: \_\_\_\_\_

Simple Genetics Practice Problems

1. For each genotype, indicate whether it is heterozygous (HE) or homozygous (HO)

- |          |          |          |          |
|----------|----------|----------|----------|
| AA _____ | Ee _____ | ll _____ | Mm _____ |
| Bb _____ | ff _____ | Jj _____ | nn _____ |
| Cc _____ | GG _____ | kk _____ | OO _____ |
| Dd _____ | HH _____ | Ll _____ | Pp _____ |

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

- |   |   |
|---|---|
| <i>Purple flowers are dominant to white flowers</i> | <i>Brown eyes are dominant to blue eyes</i>         |
| PP _____  | BB _____  |
| Pp _____  | Bb _____  |
| pp _____  | bb _____  |
| <i>Round seeds are dominant to wrinkled</i>         | <i>Bobtails are recessive (long tails dominant)</i> |
| RR _____  | TT _____  |
| Rr _____  | Tt _____  |
| rr _____  | tt _____  |

3. For each phenotype, list the genotypes. (Remember to use the letter of the dominant trait)

- |  |   |
|--|---|
| <i>Straight hair is dominant to curly.</i> | <i>Pointed heads are dominant to round heads.</i> |
| _____ straight                             | _____ pointed                                     |
| _____ straight                             | _____ pointed                                     |
| _____ curly                                | _____ 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 Crosses. 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? \_\_\_\_\_

11. Two plants, both heterozygous for the gene that controls  
flower color are crossed. What percentage of their offspring  
will have purple flowers? \_\_\_\_\_  
What percentage will have white flowers? \_\_\_\_\_