

# Genetics Practice Problems - Simple Worksheet

1. For each genotype below, indicate whether it is heterozygous (He) or homozygous (Ho)

AA \_\_\_\_\_ Bb \_\_\_\_\_

Cc \_\_\_\_\_ DD \_\_\_\_\_

Ee \_\_\_\_\_ ff \_\_\_\_\_

Gg \_\_\_\_\_ HH \_\_\_\_\_

Ii \_\_\_\_\_ Jj \_\_\_\_\_

kk \_\_\_\_\_ LL \_\_\_\_\_

Mm \_\_\_\_\_ nn \_\_\_\_\_

oo \_\_\_\_\_ Pp \_\_\_\_\_

2. For each of the genotypes below determine what phenotypes would be possible.

*Purple flowers are dominant to white flowers.*

PP \_\_\_\_\_ Pp \_\_\_\_\_ pp \_\_\_\_\_

*Brown eyes are dominant to blue eyes*

BB \_\_\_\_\_ Bb \_\_\_\_\_ bb \_\_\_\_\_

*Bobtails in cats are recessive.*

TT \_\_\_\_\_ Tt \_\_\_\_\_ tt \_\_\_\_\_

*Round seeds are dominant to wrinkled seeds*

RR \_\_\_\_\_ Rr \_\_\_\_\_ rr \_\_\_\_\_

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

*Straight hair is dominant to curly.*

\_\_\_ straight \_\_\_ curly

*Pointed heads are dominant to round heads.*

\_\_\_\_\_ pointed \_\_\_\_\_ round

4. Set up the Punnet squares for each of the crosses listed below.

*Round seeds are dominant to wrinkled seeds.*

RR x rr

What percentage of the offspring will be round?


Rr x rr

What percent of the offspring will be round?


RR x Rr

What percent of the offspring will be round?


Rr x Rr

What percent of the offspring will be round?


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? \_\_\_\_\_

12. In guinea pigs, the allele for short hair is dominant.

What genotype would a heterozygous short haired guinea pig have? \_\_\_\_\_

What genotype would a purebreeding short haired guinea pig have? \_\_\_\_\_

What genotype would a long haired guinea pig have? \_\_\_\_\_

13. Show the cross for a pure breeding short haired guinea pig and a long haired guinea pig.

What percentage of the offspring will have short hair? \_\_\_\_\_

14. Show the cross for two heterozygous guinea pigs.

What percentage of the offspring will have short hair? \_\_\_\_\_

What percentage of the offspring will have long hair? \_\_\_\_\_

15. Two short haired guinea pigs are mated several times. Out of 100 offspring, 25 of them have long hair. What are the probable genotypes of the parents?

\_\_\_\_\_ x \_\_\_\_\_

**Show the cross to prove it!**