**Punnett Squares Worksheet**

**Show all of your work** on a separate sheet of lined paper, then write your final answers on these spaces (step 4 of our 4 step process). **Attach** your lined paper to this worksheet.

1. A TT (tall) plant is crossed with a tt (short plant).
     What percentage of the offspring will be tall? 100% (Tt)

2. A Tt plant is crossed with a Tt plant.
    What percentage of the offspring will be short? 1 out of 4 or 25% (tt)

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

2 out of 4 or 50% (RR)

4.A homozygous round seeded plant is crossed with a homozygous
wrinkled seeded plant. What are the genotypes of the parents? RR x rr

What percentage of the offspring will also be homozygous?

0 out of 4 (0%) because all of the offspring are Rr

5. 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? 4 out of 4 or 100% (pp)

6. A white flowered plant is crossed with a plant that is
heterozygous for the trait. What percentage of the
offspring will have purple flowers? 2 out of 4 or 50% (Pp)

7. Two plants, both heterozygous for the gene that controls
flower color are crossed. What percentage of their offspring
will have purple flowers? 3 out of 4 or 75% (1 PP and 2 Pp)
What percentage will have white flowers? 1 out of 4 or 25% (pp)

8. In guinea pigs, the allele for short hair is dominant.
What genotype would a heterozygous short haired guinea pig have? Ss
What genotype would a purebreeding short haired guinea pig have? SS
What genotype would a long haired guinea pig have? ss

9. 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? 4 out of 4 or 100% (Ss)

10. Show the cross for two heterozygous guinea pigs.
What percentage of the offspring will have short hair?

3 out of 4 or 75% (1 SS and 2 Ss)
What percentage of the offspring will have long hair? 1 out of 4 or 25% (ss)

11. 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!

A short haired guinea pig can be (SS or Ss)

Try the cross of A) SS x SS, B) SS x Ss, and C) Ss x Ss

1. Would have 0% long (ss) – incorrect
2. Would have 50% long (ss) – incorrect
3. Would have 25% long (ss) – correct

The parents are most likely Ss and Ss (hybrids)

Don’t forget to study **CODOMINANCE** AND **INCOMPELTE** **DOMINANCE** (hint hint cough cough)