Genetics Practice Problem Sets

T=tall	P=purple	R=round	Y=yellow
t=short	p=white	r=wrinkled	y=green

Genetics Practice Problems 1

List the genotype and phenotype ratios for the following:

1) Yy x Yy
2) Rr x rr
3) Tt x Tt
4) Pp x pp

Genetics Practice Problems 2

List the genotype and phenotype ratios for the following:

1) Homozygous dominate tall pea plant crossed with heterozygous tall pea plant
2) Heterozygous purple flower pea plant crossed with heterozygous purple flower pea plant
3) Pink snap dragon crossed with a red snap dragon
4) White snap dragon crossed with pink snap dragon
5) Mom with A blood type (I^A i) crossed with dad with B blood type (I^B i)
6) Mom with O blood type crossed with dad with B blood type (I^B i)
7) Mom with AB blood type crossed with dad with O blood type
8) Homozygous dominate tall, purple flower pea plant crossed with homozygous recessive short, white flower pea plant

Genetics Practice Problems 3

Use a testcross or probability to find the genotype and phenotype ratios

1) Heterozygous round seed x heterozygous round seed
2) Heterozygous for A blood type x homozygous recessive O blood type
3) AB blood type x heterozygous for B blood type

Genetics Practice Problems 4

Use a testcross or probability to find the phenotype ratios of the F1 generation

1) RrYy x RRYy
2) Rryy x RrYy
3) Rryy x rrYy

Genetics Problems Set 5

Create a test cross for each of the following and report the resulting genotype and phenotype ratios. Refer to your notes for help with the snap dragon and blood type problems.

Pea plan genes:

1. Tt x Tt
2. Rr x rr
3. yy x Yy
4. White flower pea plan mated with a heterozygous purple flower pea plan
5. Heterozygous round seed plan mated with a heterozygous round seed plant
6. A green seed plant mated with a heterozygous yellow seed plant
7. Red snap dragon mated with a white snap dragon
8. Pink snap dragon x pink snap dragon
9. Red snap dragon mated with a pink snap dragon
10. I^Ai x I^Bi
11. I^AI^B x ii
12. What is the percent chance of two parents with blood type AB producing a child with blood type AB?
13. A child has blood type O. His father has blood type A and his mother has blood type B. What is the genotype of the mother and father?
14. A person needs a blood transfusion. Why is it important to know a patient's blood type and the donor's blood type?