PUNNETT SQUARE PRACTICE 2 NAME_____ HR__

Let's say that in seals, the gene for the length of the whiskers has two alleles. The dominant allele (W) codes long whiskers & the recessive allele (w) codes for short whiskers.

1) What percentage of offspring would be expected to have short whiskers from the cross of two long-whiskered seals, one that is homozygous dominant and one that is heterozygous?

Percent = _____

2) If one parent seal is pure long-whiskered and the other is short-whiskered, what percent of offspring would have short whiskers?

Percent = _____

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3) In purple people eaters, one-horn is dominant (H) and no horns is recessive.(h) Draw a Punnett Square showing the cross of a purple people eater that is hybrid for horns with a purple people eater that does not have horns. Summarize the genotypes & phenotypes of the possible offspring.

Genotypes = _____

Phenotypes = _____

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4) A green-leafed luboplant (*I made this plant up*) is crossed with a luboplant with yellow-striped leaves. The cross produces 185 green-leafed luboplants. Which color is dominant? _____. How would you notate dominance on a Punnett square?_____

← **cross 1 of green plant and yellow**

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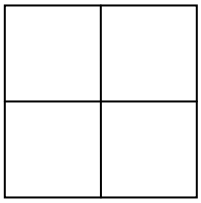
5) Now take the offspring of this cross (First generation) and summarize the genotypes & phenotypes of their offspring (Second generation). [Take the "babies" of cross one and mate them together]



← cross 2 of first generation plants

Genotypes = _____

Phenotypes = _____

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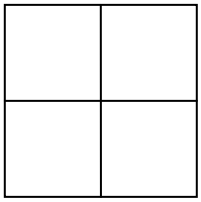
6) Mendel found that crossing wrinkle-seeded plants (homozygous recessive) with pure round-seeded plants (homozygous dominant) produced only round-seeded plants. What genotypic & phenotypic ratios can be expected from a cross of a wrinkle-seeded plant & a plant heterozygous for this trait?



Genotypes = _____

Phenotypes = _____

NOTES:

- **There are only so many possible crosses that you could be asked about. They are:**

PARENT GENOTYPES	OFFSPRING PHENOTYPES
pure (homozygous) dominant x anything	100% of offspring with dominant trait
hybrid x homozygous recessive	50% dominant trait, 50% recessive trait
hybrid x hybrid	75% with dominant trait & 25% with recessive trait
homozygous recessive x homozygous recessive	100% recessive trait

Seem like too much to memorize? Maybe it is. But the thing is if you can use the Punnett Square, you can work out ANY problem & get reliable results, so memorizing that chart ISN'T necessary.