Genetics Problems Template

Dihybrid Cross

Parental (P) Generation:

Step 1: Determine the phenotype and genotype of the P generation.

Phenotype: ________, ________ X ________, ________

Genotype: ___ ___ , ___ ___ X ___ ___ , ___ ___

Step 2: Determine the possible gametes from each of the parents. There will be up to four possible gametes if the parent is heterozygous for both traits.

Possible gametes from Parent 1: __, __, __, __

Possible gametes from Parent 2: __, __, __, __

Step 3: Create a Punnett Square. Multiply the number of distinct gametes produced by parent 1 with the number of distinct gametes produced by parent 2 to determine the size of the Punnett Square. Fill in the genotype above the diagonal and the phenotype below. Be careful to use the correct pattern of inheritance (dom./rec., incomplete dom., co-dom., etc.).

Punnett Square

First Filial (F1) Generation
Step 4: Determine the phenotypes and genotypes of the F1 generation.

Phenotypic ratios:

Phenotype 1: ______________, ___________  # observed: ____ / total: ____

Phenotype 2: ______________, ___________  # observed: ____ / total: ____

Phenotype 3: ______________, ___________  # observed: ____ / total: ____

Phenotype 4: ______________, ___________  # observed: ____ / total: ____