Genetic Problems Exercise

Instructions: Write the genotypes of the parents (P_1) that are being crossed and then complete punnet squares to find the genotypes and phenotypes of the offspring (F_1).

1. In summer squash the yellow color is recessive to white.

a) homozygous white squash crossed with a yellow squash.

P_1 cross:

Genotypes of offspring:

Genotypic ratio of offspring:

Phenotypes of offspring:

Phenotypic ratio of offspring:

b) heterozygous crossed with a heterozygous

P_1 cross:

Genotypes of offspring:

Genotypic ratio of offspring:

Phenotypes of offspring:

Phenotypic ratio of offspring:

c) yellow crossed with homozygous white

P_1 cross:

Genotypes of offspring:

Genotypic ratio of offspring:

Phenotypes of offspring:

Phenotypic ratio of offspring:

d) Homozygous white with heterozygous

P_1 cross:

Genotypes of offspring:

Genotypic ratio of offspring:

Phenotypes of offspring:

Phenotypic ratio of offspring:

2. In garden peas a red-flowered trait is dominant over white flowers. When heterozygous tall is crossed with dwarf the phenotypic ratio is 1:1.

a) heterozygous red crossed with heterozygous red P_1 cross:

Genotypes of offspring:

Genotypic ratio of offspring:

Phenotypes of offspring:

Phenotypic ratio of offspring:

b) dwarf crossed with homozygous tall

P_1 cross:

Genotypes of offspring:

Genotypic ratio of offspring:

Phenotypes of offspring:

Phenotypic ratio of offspring:

c) homozygous red crossed with white

P_1 cross:

Genotypes of offspring:

Genotypic ratio of offspring:

Phenotypes of offspring:

Phenotypic ratio of offspring:

3. Red flowers crossed with white flowers results in pink offspring. This is an example of _____.

a) pink crossed with white

P_1 cross:

Genotypes of offspring:

Genotypic ratio of offspring:

Phenotypes of offspring:

Phenotypic ratio of offspring: