

Dihybrid Crosses

Trait	Dominant Allele	Recessive Allele
pod shape	smooth (N)	constricted (n)
pod color	green (G)	yellow (g)
flower position	axial (A)	terminal (a)
plant height	tall (T)	short (t)

1. What are the genotypic and phenotypic ratios in the offspring resulting from a cross between two pea plants that are heterozygous for pod color and pod shape?

Parental genotypes _____

Possible gametes _____

In mice, the ability to run normally is a dominant trait. Mice with this trait are called running mice (R). The recessive trait causes mice to run in circles only. Mice with this trait are called waltzing mice (r). Hair color is also inherited in mice. Black hair (B) is dominant over brown hair (b).

For each of the following problems, determine the parent genotypes, possible gametes, then construct a Punnet square to solve.

2. Cross a heterozygous running, heterozygous black mouse with a homozygous running, homozygous black mouse

Parental genotypes _____

Possible gametes _____

Offspring phenotypic ratio _____



3. Cross a homozygous running, homozygous black mouse with a heterozygous running, brown mouse

Parental genotypes _____

Possible gametes _____

Offspring phenotypic ratio _____

4. Cross a waltzing brown mouse with a waltzing brown mouse

Parental genotypes _____

Possible gametes _____

Offspring phenotypic ratio _____

5. Cross a homozygous running, heterozygous black mouse with a waltzing brown mouse

Parental genotypes _____

Possible gametes _____

Offspring phenotypic ratio _____

6. Cross a heterozygous running, brown mouse with a heterozygous running, homozygous black mouse

Parental genotypes _____

Possible gametes _____

Offspring phenotypic ratio _____

7. Cross a heterozygous running, heterozygous black mouse with a heterozygous running, heterozygous black mouse

Parental genotypes _____

Possible gametes _____

Offspring phenotypic ratio _____

