



Dihybrid Cross Worksheet

Part A: Dihybrid Cross Setup

For each of the following dihybrid crosses, set up the Punnett square and determine the possible genotypic and phenotypic ratios.

1. Cross between two pea plants that are heterozygous for both flower color (Yy) and seed shape (Rr).

Punnett Square:

	Y	y
R		
r		

Genotypic Ratio: ____ YyRr : Yyrr : yyRr : yyrr

Phenotypic Ratio: ____ Yellow Round : Yellow Wrinkled : Green Round : Green Wrinkled

2. Cross between a mouse that is heterozygous for fur color (BbDd) and a mouse that is homozygous recessive for both fur color and tail length (bbdd).

Punnett Square:

	B	b
D		
d		

Genotypic Ratio: ____ BbDd : Bbdd : bbDd : bbdd

Phenotypic Ratio: ____ Brown Long : Brown Short : Black Long : Black Short



Part B: Dihybrid Cross Problem Solving

3. In guinea pigs, black fur (B) is dominant over white fur (b), and short hair (S) is dominant over long hair (s). A black, short-haired guinea pig is crossed with a white, long-haired guinea pig.

a) Determine the genotypes of the parents.

Black, short-haired guinea pig: ____ BS

White, long-haired guinea pig: ____ bbss

b) Set up the Punnett square for the cross.

c) Calculate the genotypic and phenotypic ratios.

Genotypic Ratio: ____ BbSs : Bbss : bbSs : bbss

Phenotypic Ratio: ____ Black Short : Black Long : White Short : White Long

4. In plants, tall height (T) is dominant over short height (t), and purple flowers (P) are dominant over white flowers (p). A plant with genotype TtPp is crossed with a plant that is homozygous recessive for both traits.

a) Determine the genotypes of the parents.

TtPp plant: ____ TtPp

Homozygous recessive plant: ____ ttp

b) Set up the Punnett square for the cross.

c) Calculate the genotypic and phenotypic ratios.

Genotypic Ratio: ____ TtPp : Ttpp : ttPp : ttp

Phenotypic Ratio: ____ Tall Purple : Tall White : Short Purple : Short White



Answers:

1. Genotypic Ratio: 9 YyRr : 3 Yyrr : 3 yyRr : 1 yyrr Phenotypic Ratio: 9 Yellow Round : 3 Yellow Wrinkled : 3 Green Round : 1 Green Wrinkled
2. Genotypic Ratio: 2 BbDd : 2 Bbdd : 2 bbDd : 2 bbdd Phenotypic Ratio: 2 Brown Long : 2 Brown Short : 2 Black Long : 2 Black Short
3. a) Black, short-haired guinea pig: BBss White, long-haired guinea pig: bbss

b) Punnett Square: $\begin{array}{|c|c|} \hline B & b \\ \hline S & s \\ \hline \end{array}$

c) Genotypic Ratio: 1 BbSs : 1 Bbss : 1 bbSs : 1 bbss Phenotypic Ratio: 1 Black Short : 1 Black Long : 1 White Short : 1 White Long

4. a) TtPp plant: TtPp Homozygous recessive plant: ttpp

b) Punnett Square: $\begin{array}{|c|c|} \hline T & t \\ \hline P & p \\ \hline \end{array}$

c) Genotypic Ratio: 1 TtPp : 1 Ttpp : 1 ttPp : 1 ttpp Phenotypic Ratio: 1 Tall Purple : 1 Tall White : 1 Short Purple : 1 Short White

Feel free to use this dihybrid cross worksheet with the provided answers for practice or educational purposes.