

Name _____ Date _____ Period _____

Dihybrid Crosses
'Crosses involving two traits'

DIRECTIONS: Include the appropriate Punnett Squares to demonstrate how you answered each problem or you will receive no credit.

1. In humans, the gene for brown eyes is dominant to the gene for blue eyes. The gene for right handedness is dominant to the gene for left handedness. Two individuals heterozygous for both of these characteristics marry. What phenotypes are expected in the offspring?
2. In cats, the allele for black fur is dominant to the allele for brown and the allele for short hair is dominant to the allele for long hair. Cross a black, short haired cat (BBSS) with a black, long haired cat (Bbss). What proportion of the offspring from the cross would be expected to be black with short hair?
3. A black, smooth guinea pig was mated with an albino, rough guinea pig. Their offspring were black, rough and black, smooth. These were the only types produced over a period of years in a number of matings. Black and rough are dominant traits. What are the probable genotypes of each parent?
4. Cross a male rabbit homozygous for long ears and heterozygous for floppy ears with a female rabbit that has short, straight ears. List the possible phenotypes and the number of each expected to appear in the offspring. Floppy and long ears are dominant traits.
5. In tomato plants, the gene for purple stems is dominant to its allele for green stems, and the gene for red fruit is dominant to its allele for yellow fruit. If two tomato plants heterozygous for both traits are crossed, state what proportion of the offspring are expected to have:
 - a) purple stems and yellow fruits
 - b) green stems and red fruits
 - c) purple stems and red fruits
6. If 640 seeds resulting from the cross in the question above are collected and planted, determine how many are expected to grow into plants with:
 - a) red fruit
 - b) green stems
 - c) both green stems and yellow fruits