

Genetics Practice Quiz-2

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Name _____

1. Suppose in snapdragons red flowers result from the genotype **WW**, white flowers from **ww**, and pink flowers from **Ww**. The flower shape will be straight if the genotype **CC** or **Cc** is present, while a genotype **cc** causes the flowers to curl. What phenotypic ratio will result from a cross between two plants with pink flowers, both of which are heterozygous for straight shaped petals?
2. In corn, two independent genes control kernel color. One genetics called color with alleles **C** (color) and **c** (white). The other gene is called pigment and has alleles **P** (pigment) and **p** (white). If either of the gene pairs is in the homozygous state, then the kernels will be white. However, if at least one dominant allele of each locus (gene pair location) is present, then pigment can for in the kernels. Two corn plants with the following genotypes were crossed:

CcPp
female

x

CCPp
male

- a) What is the phenotype of the parental plants?
 - b) List the different genotypes of gametes for the female parent.
 - c) Work out the Punnett Square for this cross. List the genotypes of the offspring and determine the ratio of color to white kernels in the F-1 generation.
3. In humans, two abnormal conditions, cataracts in the eyes and excessive fragility in bones, seem to depend on separate dominant genes located on different chromosomes. A man with cataracts and normal bones, whose father had normal eyes, married a woman free from cataracts but with fragile bones. Her father had normal bones. What is the probability that their first child will (a) be free from both abnormalities; (b) have cataracts but no fragile bones; (c) have fragile bones but not cataracts; (d) have both cataracts and fragile bones?

