

GENETICS PROBLEMS

1. The gene for widow's peak (W) is dominant to the gene for straight hairline (w). A male homozygote with widow's peak marries a female homozygote with straight hairline, what are the possible genotypic and phenotypic ratios of the F1 and F2 generations that may result from the union?

Phenotype of Parents x

Genotype of Parents x

Genes in gametes x

Genotype of F1 Generation

Phenotype of F1 Generation

Genes in F1 gametes **or**

(Punnett Square)

Genotype of F2 Generation : :

Phenotype of F2 Generation :

2. The gene for normal vision (C) is dominant to the X-linked recessive gene (c) for colorblindness. Y chromosomes lack X-linked genes.

a) If a homozygous woman with normal vision mates with a colorblind man, what is the probability that they will have a colorblind child?

- A. 0% B. 25% C. 50% D. 100%

b) If a heterozygous woman with normal vision mates with a man with normal vision, what is the probability that they will have a colorblind son?

- A. 0% B. 25% C. 50% D. 100%