Answer on Question #54557 – Biology – Genetics

Question:

In a random mating population frequency of dominant allele is 0.7. What will be the frequency of recessive phenotype? and how.

Answer.

The basic formulas:

$$p^2 + 2pq + q^2 = 1 \; and \; p + q = 1$$

p = frequency of the dominant allele in the population
q = frequency of the recessive allele in the population
p^2 = frequency of homozygous dominant individuals
q^2 = frequency of homozygous recessive individuals
2pq = frequency of heterozygous individuals

Thus, frequency of recessive allele: $q = 1 - p = 1 - 0.7 = 0.3.$

Frequency of recessive phenotype: $q^2 = 0.3^2 = 0.09.$