

Attendance Quiz for Lecture 15 of Dr. Z.'s Dynamical Models in Biology class

Name: (print!)

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1. Recall that the Hardy-Weinberg rule tells you that if in the current generation the frequency of genotypes AA , Aa and aa are u , v , and $1 - u - v$, respectively, then in the next generation (u, v) transforms according to:

$$(u, v) \rightarrow \left(u^2 + vu + \frac{1}{4}v^2, -2vu - 2u^2 + 2u - \frac{1}{2}v^2 + v \right)$$

If right now, $\frac{1}{2}$ of the population have genotype AA , $\frac{1}{4}$ of the population have genotype Aa , what is the fraction of aa genotypes (i) Right now? (ii) In the next generation? (iii) In ten generations?