

Stat 536 Homework 10

due: 11/17/08

1. [10 pts] Felsenstein Chapter 8 Exercise 4.
2. [10 pts] Felsenstein Chapter 8 Exercise 5.
3. [10 pts] The following two locus data was presented in class.

	$B-$	bb	a_B
$C-$	95	90	2.5
cc	38	34	2
a_C	28.5	28	

where a_B and a_C are the normalized genotypic values of the dominant phenotypes at each locus. We used this data to argue that the loci contributed additive effects to the genotypic value (number of pigment granules per unit of hair). Assume both genes c and b are recessive and calculate the mean granule count in a HWE population with $p_b = 0.3$ and $p_c = 0.2$ the frequencies of the two recessive alleles.

4. [10 pts] Compute the breeding value and dominance deviation for the $bbcc$ genotype in the above problem. Also report the *absolute* breeding value of this genotype in units of granule numbers (i.e. not normalized by population mean).