

Question 1:

Two alleles: R and B
Three Genotypes: RR, RB, BB

RR	RB	BB
48	73	122

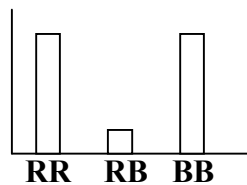
N = 243

Obs. Allele Freq.
 $f(R) = 2(48)+73 / 486 = 0.35$
 $f(B) = 2(122)+73 / 486 = 0.65$

Obs. Genotype Freq.
 $f(RR) = 48/243 = 0.197$
 $f(RB) = 73/243 = 0.30$
 $f(BB) = 122/243 = 0.51$

Predicted / expected Genotype Frequency
 $f(RR) = 0.35 \times 0.35 = 0.123$
 $f(RB) = 2 \times 0.35 \times 0.65 = 0.455$
 $f(BB) = 0.65 \times 0.65 = 0.422$

- 1) What is the observed frequency of the RB genotype? 0.30**
- 2) What is the expected frequency of the RB genotype? 0.455**
- 3) Which genotype shows the greatest difference between observed and expected (predicted) frequency? The heterozygote ($0.455 - 0.30 = 0.155$)**
- 4) Is this population evolving? Yes**
 - 4a) If no, why not?**
 - 4b) If yes, what type of selection is operating? Disruptive Selection**



Question 2:

**Two alleles: R and B
Three Genotypes: RR, RB, BB**

	RR	RB	BB
Before	450	700	350
After	325	850	325
After/Before	0.72	1.21	0.93
Divide by largest	0.72/1.21	1.21/1.21	0.93/1.21
Relative fitness=	0.59	1	0.76

1) Which genotype has the best relative fitness? RB

2) What is the value for the genotype with the worst relative fitness? 0.59

3) What type of selection is operating in this population? Stabilizing

