

1. Here is a genetic map A 18 mu B 10 mu C
AAbbCC is crossed to aaBBcc to produce an F1

a) If you produce 1000 offspring from test-crossing the F1, what **genotypes** do you expect and in what numbers?

b) If there is interference of 33.3%, what **phenotypes** do you expect and in what numbers?

Staple!

2. You breed a female mouse from a true-breeding population with long black curly fur to a male from a true breeding population of golden short straight fur. The F1 generation all have short straight black fur. You test-cross these F1s to mice with long golden curly fur. This produces the following phenotypes and numbers of offspring.

Phenotype			
hairlength	curly?	black?	#
long	curly	golden (b)	26
long	curly	Black	222
long	straight (C)	golden (b)	225
long	straight (C)	Black	29
short (L)	curly	golden (b)	27
short (L)	curly	Black	220
short (L)	straight (C)	golden (b)	223
short (L)	straight (C)	Black	28

a) Are any of the genes linked? Which, if any?

b) Figure out the map unit distance between any linked genes, show calculations.

