

Homework 6 part A
Due Friday Feb 29, 2008

name (print) _____

1. Each row is a class of ordered octads (shown sideways) resulting from a cross of AB and ab *Neurospora crassa* haploids, the number is the number of cases where this product was found.

AB AB AB AB ab ab ab ab	92
Ab Ab Ab Ab aB aB aB aB	93
AB AB aB aB Ab Ab ab ab	22
Ab Ab ab ab AB AB aB aB	21
aB aB AB AB ab ab Ab Ab	19
ab ab Ab Ab aB aB AB AB	24
aB aB AB AB Ab Ab ab ab	20
ab ab Ab Ab AB AB aB aB	24
aB aB aB aB Ab Ab Ab Ab	92
<u>ab ab ab ab AB AB AB AB</u>	<u>93</u>
total	500

a) Are A and B linked to each other?

b) Is either A or B linked to the centromere?

2. The *w* allele causes neurospora (a haploid fungus) to have white spores, *arg* causes neurospora to require arginine for growth. The following are the results of ordered octad analysis from individual asci. The octads are combined so that you see the original 4 products of meiosis.

Spore pair	type 1	type 2	type 3	type 4	type 5	type 6	type 7
1 - 2	<i>w arg</i>	<i>w arg</i>	<i>w arg</i>	<i>w arg</i>	<i>w +</i>	<i>w +</i>	<i>w arg</i>
3 - 4	+ +	<i>w +</i>	+ <i>arg</i>	<i>w arg</i>	<i>w +</i>	+ +	+ +
5 - 6	+ <i>arg</i>	+ <i>arg</i>	+ +	+ +	+ <i>arg</i>	<i>w arg</i>	<i>w arg</i>
7 - 8	<i>w +</i>	+ +	<i>w +</i>	+ +	+ <i>arg</i>	+ <i>arg</i>	+ +
total	3	7	10	52	2	8	2
Tetrad type							
MII <i>w</i>							
MII <i>arg</i>							

a) write in the tetrad type (PD, NPD, T) and whether the tetrad is MII for *w* or *arg* in the appropriate empty boxes under the totals.

b) what were the genotypes of the parental strains?

c) Calculate all linkages and draw a map showing the map units.