

Name _____ Date _____ Class _____

Online lab: Meiosis

How Can the Frequency of Crossing Over Be Estimated?

Lab Notebook

Ascus number	No Crossing Over	Crossing Over
1		
2		
3		
4		
5		
6		
7		
8		
9		
10		
11		
Total number of asci		

Questions

1. What is the percent of crossovers? (number of asci with crossovers divided by total number of asci multiplied by 100)
2. For the sample shown here, what is the map distance between the gene for spore color and the centromere? (% of crossovers divided by 2)
3. In the second set of data, how many of these asci contain a spore arrangement that resulted from crossing over?
4. From this second small sample, calculate the map distance between the gene and centromere.
5. In what cellular processes is mitosis involved? In what cellular process is meiosis involved?
6. In what type of cells does mitosis occur? In what type of cells does meiosis occur?

- 7.** How many times does DNA replicate in mitosis? How many times does DNA replicate in meiosis?
- 8.** How many cellular divisions occur in mitosis? How many cellular divisions occur in meiosis?
- 9.** How many daughter cells are formed by mitosis? How many daughter cells are formed by meiosis?
- 10.** What is the chromosome number in daughter cells formed by mitosis from diploid parent cells? What is the chromosome number in daughter cells formed by meiosis from diploid parent cells?
- 11.** In mitosis, are daughter cells identical to or different from parent cells? In meiosis, are daughter cells identical to or different from parent cells?
- 12.** In mitosis, when do synapsis and crossing over occur? In meiosis, when do synapsis and crossing over occur?
- 13.** The cell cycle in a certain cell type has a duration of 16 hours. The nuclei of 660 cells showed 13 cells in anaphase. What is the approximate duration of anaphase in these cells?