MITOSIS
PRE-LAB

Name: _____ Date: _____

Total Points: 35 Due Date: _____

1. What are the two parts of cell division? (2 points)
2. Where do plants grow? (2 points)
3. What type of plant cell and animal cell will you be observing? (2 points)
4. Where will you find dividing cells in the onion root tip? (2 points)
5. Complete the table with the data below (5 points)

Phase of the Cell Cycle	# of cells in field 1	# of cells in field 2	# of cells in field 3	Total # of cells	% of total cells counted
Interphase	100	120	96		
Prophase	10	11	22		
Metaphase	4	6	7		
Anaphase	2	4	8		
Telophase	1	2	4		
XXXXXXX	XXXXXXX	XXXXXXX	Total		

6. Graph the results (5 points)
7. In a 24 hour period, how long does each stage last (in minutes)? (5 points)

Interphase	Prophase	Metaphase	Anaphase	Telophase

8. What do you see in an animal cell, that you don't see in a plant cell? (2 points)
9. Describe what happens in both animal and plant cells in the following stages of mitosis. (10 points)

Interphase	
Prophase	
Metaphase	
Anaphase	
Telophase	

MEIOSIS
PRE-LAB

Name: _____ Date: _____

Total Points: 35 Due Date: _____

1. What is the overall purpose of meiosis and how is this purpose accomplished? (2 points)
2. What does meiosis increase and how is this increase accomplished? (2 points)
3. How can you estimate the distance between two genes? (1 point)
4. Complete the table below. (16 points)

Stage	Diagram	Description
Prophase I		
Metaphase I		
Anaphase I		
Telophase I		
Prophase II		
Metaphase II		
Anaphase II		
Telophase II		

5. Describe the lifecycle of the organism used for the second half of the lab. (2 points)

6. What must occur in order for you to observe the crossing over? (1 point)

7. Compare the crossing over asci to the non-crossing over asci. (4 points)

Crossing Over Non-crossing over

8. What controls the frequency of crossing over? (1 point)

9. Complete the table below. (3 points)

# of 4:4 Asci	# of Asci showing crossing over	Total # of Asci	% of Asci showing crossing over	Gene to centromere distance in map units

10. Diagram the chromosome with the appropriate gene to centromere distance as determined in question #9. (3 points)