

## Biology 3201 - Online Assignment

### *Online Onion Root Tips*

#### *Determining time spent in different phases of the cell cycle*

- Log on. Open Internet browser.
  - Type in the following URL [www.biology.arizona.edu/cell\\_bio/activities/cell\\_cycle/cell\\_cycle.html](http://www.biology.arizona.edu/cell_bio/activities/cell_cycle/cell_cycle.html)
1. Briefly describe how the cell images you will be examining in this lab were captured.

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Select NEXT

Read the Description of the phases of the cell cycle and use your notes .

2. List and state the major events that characterize the 5 phases of the cell cycle.

- a. 

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- b. 

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- c. 

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- d. 

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- e. 

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Select Next

In this activity we will be attempting to determine the amount of time that cells found in the root tips of onions spend in the various stages of the cell cycle. Use the table below to record the data in the remainder of the activity. Be careful to read all instructions.

	Interphase	Prophase	Metaphase	Anaphase	Telophase
Number of cells					
Percent of cells					

Total # of cells viewed = 36

In this activity you are asked to identify the cell shown on the screen as being in one of the five stages of mitosis. The data is to be recorded in the above table. The numbers can be tallied as you go along or you can wait until you have completed the examination of all cells, and then count the numbers in each phase.

Using the data collected in this investigation, you are asked to carryout the following tasks and answer the following questions.

1. Using the data collected in this investigation you are to construct a PIE GRAPH that shows the percentage of time that an onion root tip cell spends in the various stages of its life. **This Pie graph is NOT to be computer generated.** This graph is to be attached to this sheet complete with workings.

2. The total Life span of a root onion tip cell is approximately ~~1440~~<sup>870</sup> minutes, that is from the time the cell is formed until it completes mitosis to form 2 new cells. Use this information to determine the amount of time in minutes and seconds that a cell would spend in each stage of the cell cycle.

	Interphase	Prophase	Metaphase	Anaphase	Telophase
Time spent in stage (min,sec.)					

3. What stage of the cell cycle lasts the longest? Comment on the importance of the cell spending so much time in this stage of its life.

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4. Certainly the most accurate way to determine the amount of time that a cell spends in various stages of its life would be to view a single living cell and record times for each stage. There are several difficulties associated with that type of procedure. Comment on the validity of our determination of the amounts of time spent by cells in each stage.

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