Name: _____ Group: _____ Date: _____

LAB 39
OBSERVATION

THE PHASES OF MITOSIS

STUDENT BOOK	Chapter 5, page 133
TOOLBOX	Pages 23, 25

Goal

Identify the different phases of mitosis through observation of onion cells.

Observation criteria

1. What is the period between two mitoses called?

_____

2. What happens to a cell during this period?

_____

3. When does DNA replication occur?

_____

4. What is the purpose of DNA replication?

_____

_____

5. What are the four phases of mitosis?

_____

6. What characteristics allow you to recognize each phase of cell division when observed during this lab?

	Interphase	**Mitosis**			
		Phase 1	Phase 2	Phase 3	Phase 4
Nuclear membrane					
Appearance of DNA					
Location of chromosomes					

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7. Observing the different phases of mitosis using onion cells is both practical and economical. What part of an onion would best serve to observe the phases of mitosis? Explain your answer.

_____

_____

Materials

- dropper bottle of acetocarmine solution (dye)
- slide
- forceps
- onion roots *or* garlic roots (trimmed and coloured)
- cover slip
- blotting paper
- light microscope

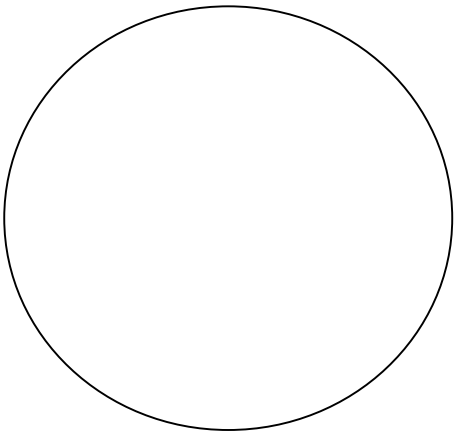
Procedure

1. Place a drop of acetocarmine solution on the slide.
2. Collect a sample of onion roots with the forceps.
3. Place the roots on the slide.
4. Place the cover slip on the slide.
5. Press gently on the cover slip with blotting paper to crush the cells. Wipe off excess solution.
6. Observe the cells under the microscope.
7. Illustrate your observations.
8. Clean up and put away materials.

Observations

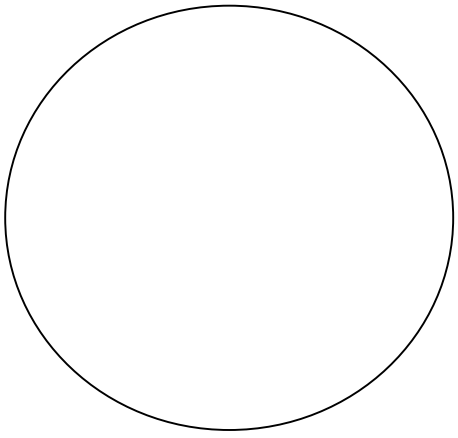
Illustrate your observations in the circles below. Make at least one drawing of a cell in interphase and at least one drawing for every phase of mitosis. Indicate the degree of magnification. Give each circle a title.

Title: _____



Magnification: _____

Title: _____



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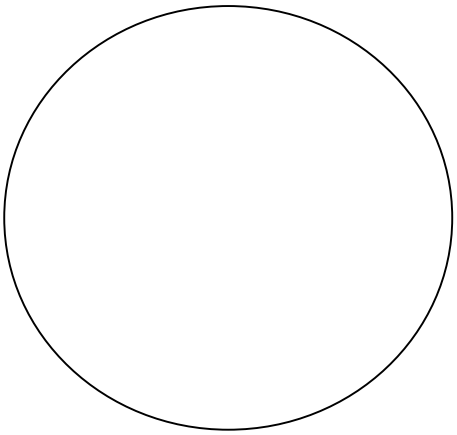
Name: _____ Group: _____ Date: _____

Title: _____



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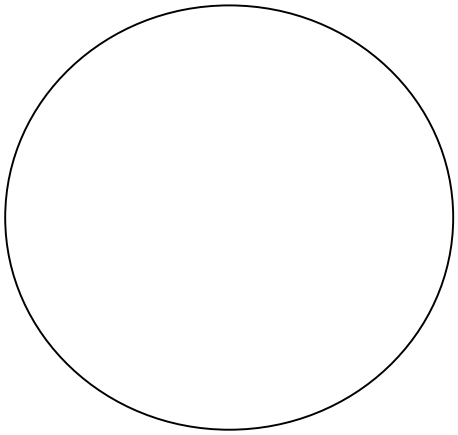

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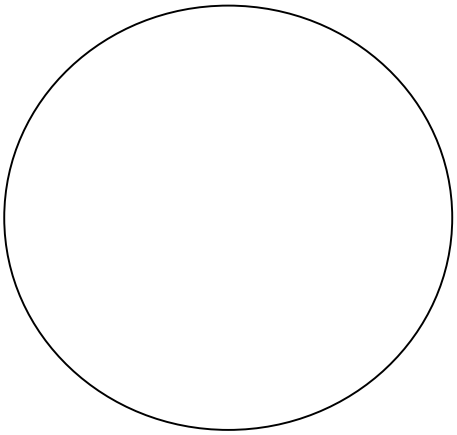

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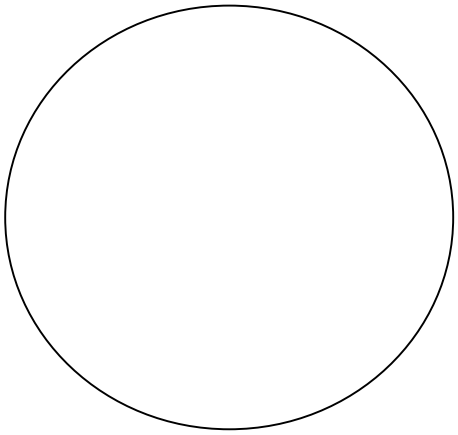

Magnification: _____

Reflecting on your observations

1. Do your observations help you to better understand the phases of mitosis? Explain your answer.

_____

2. Would your observations be the same if you were using human cells? Explain your answer.

_____

3. How could you improve the protocol for this lab?

_____