

# Cell Cycle Review

## Short Answer

1. What is the longest phase of the cell cycle?
2. A plant cell has 12 chromosomes at the end of mitosis. How many **pieces of DNA** would it have in the G2 phase of its next cell cycle?
3. How is cytokinesis different in plant and animal cells?
4. Draw and label the all parts of a chromosome. (3 parts)
5. Draw and label the parts of a centrosome in an animal cell. (3 parts)
6. What molecule starts to increases in amount in the cell when the G1 checkpoint is reached (part of cell cycle regulation)
7. What protein complex is produced to trigger mitosis when the term from #7 is present?
8. Explain one of the following: density-dependent inhibition, anchorage dependence, or growth factors (platelet derived growth factors)

## Multiple Choice

*Refer to the following five terms to answer questions 8-12. Choose the most appropriate term for each phrase. Each term may be used once, more than once, or not at all.*

- A. Telophase
- B. Interphase
- C. Cytokinesis
- D. Prometaphase
- E. Anaphase
- F. Metaphase

9. A cleavage furrow begins to form during this stage of mitosis
10. Division of the cytoplasm of the cell
11. Sister chromatids move along kinetochore microtubules toward opposite poles
12. The genetic material of the cell replicates to prepare for cell division
13. Microtubules begin to attach to the centromeres of the sister chromatids when the nuclear envelop breaks down
14. A cell in which of the following phases would have the LEAST amount of DNA?
  - A. G<sub>0</sub>
  - B. G<sub>2</sub>
  - C. Prophase
  - D. Metaphase
  - E. Anaphase