**Biochemistry: DNA, Proteins, and their Applications – Lecture 3 Worksheet**

Definitions:

* Interphase:
* Mitosis:
* Cell Cycle Checkpoint:
* Mitogens:
* Tumor Microenvironment:

Cell Cycle:

1. What is the difference between mitosis and cell division?
2. What does it mean for a cell to be in a G0 phase?
3. What are the 5 main cell cycle checkpoints, when do they occur, and what proteins are involved in the checkpoint mechanism?
4. [True/False] If false explain why: Cyclins/mitogens are constitutively active throughout the entire cell cycle.
5. Do cancer cells need mitogens/growth factors? Why or why not?
6. [True/False] If false explain why: You can get cancer from one mutation.

1. Cancer is fundamentally a disease of cell cycle dysregulation, why? Hint: What types of proteins are mutated in cancers?
2. Name some important factors that compose the tumor microenvironment.
3. What was the most interesting topic to you discussed today?