

Part 1: Please fill in the data tables based on your findings in the lab.

Table 1: Record your data for the number of cells in each stage of the cell cycle observed in normal tissues.

Tissue Type	# Cells in Interphase	# Cells in Prophase	# Cells in Metaphase	# Cells in Anaphase	# Cells in Telophase
Lung Tissue Sample 1					
Lung Tissue Sample 2					
Stomach Tissue Sample 1					
Stomach Tissue Sample 2					
Ovarian Tissue Sample 1					
Ovarian Tissue Sample 2					

Table 2: Record your data for the number of cells in each stage of the cell cycle observed in cancerous tissues.

Tissue Type	# Cells in Interphase	# Cells in Prophase	# Cells in Metaphase	# Cells in Anaphase	# Cells in Telophase
Lung Tissue Sample 1					
Lung Tissue Sample 2					
Stomach Tissue Sample 1					
Stomach Tissue Sample 2					
Ovarian Tissue Sample 1					
Ovarian Tissue Sample 2					

Table 3: Use the data in Table 1 to calculate the Mitotic Index (average % cells dividing) for each normal tissue type.

Tissue Type	Avg. % cells at rest	Mitotic Index
Lung - normal		
Stomach - normal		
Ovary - normal		

Table 4: Use the data in Table 2 to calculate the average % cells dividing and average % cells at rest in each cancerous tissue type.

Tissue Type	Avg. % cells at rest	Mitotic Index
Lung - cancerous		
Stomach - cancerous		
Ovary - cancerous		

Part 2: Please answer the following questions in complete sentences.

- Determine which phase(s) of mitosis each of the following occur (this question can be answered without complete sentences):
 - Centromeres split and chromosomes move toward opposite sides of the cell _____
 - Chromatin coils to form visible chromosomes _____
 - The nuclear membrane disappears _____
 - Sister chromatids line up in the center of the cell _____
 - Sister chromatids are visible, and attached to each other at the centromere _____
- A: What does your data indicate about the rate of cell division in cancerous tissue compared to the rate of cell division in normal tissue? What data did you use to answer this question?

B: Which type of cancer is the fastest growing? Use relevant data to explain why.

3. A: Consider the percent dividing cells in normal lung, normal stomach, and normal ovarian tissue. Why do you think there are more cells dividing in the stomach and ovary tissue than in the lung tissue? Explain your answer.
- B: How does normal skin tissue compare to the normal tissue in muscles, kidneys, and the lungs?

Part 3: Please answer the following question.

This lab explores three common cancers. An additional form of cancer – Skin Cancer – used to be seen only in older individuals but is now seen in younger individuals, many in their early 20s.

Using what you have learned in the lab, information from your textbook, and other research, write a paragraph or two to answer the following questions. Please include your sources.

- What are the main causes of skin cancer?
- What are the three main types of skin cancer? Briefly distinguish between the three.
- Discuss what factors may be contributing to the increase in skin cancer among young adults.
- Discuss two or three steps to prevent it.