1. What is the KEY CONCEPT for section 5-3? \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Main Idea: Internal and external factors \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ cell division.

Place each of the following phrases in the correct location to complete the concept map, which shows important ideas about growth factors*: specific cells, platelet-derived growth factor,* and *cell division.*

e.g.

3.

e.g.

**Growth factors**

stimulate

2.

e.g.

e.g.

Erythropoietin

(define)

4.

many
cell types

Use the word bank to complete the sequence diagram below: *kinases, cell division, phosphorylate,* and *cyclins.*

result in

7.

8.

target
molecules

activate

6.

5.

 \_\_\_\_\_\_ 9.What is apoptosis?

a. programmed cell division c. abnormal cell function

b. programmed cell death d. abnormal cell growth

Main Idea: Cell division is \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ in cancer.

10. If cell division is not properly regulated, the result may be a type of disease called \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.

Vocabulary Check - Circle the word or phrase that best completes the statement.

11. Metastasize means to shrink and die / spread and grow by breaking away from a tumor.

12. A substance known to produce or promote the development of cancer is called a carcinogen / growth factor.

13. **Identify** carcinogens to which *you* are regularly exposed.\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

 14. Complete the concept map below about cancer cells by selecting from the following words: *benign, carcinogen, malignant, metasteses,* and *tumors*. Write a quick definition in the circle as well.

**Cancer cells**

form

a.

e.g.

e.g.

b.

c.

results in

d.

15. Draw a cartoon to help show the difference between ***benign*** and ***malignant***.

 Vs.

16. **Hypothesize** – Suppose chromosomes in a skin cell are damaged by ultraviolet radiation. If the damaged genes do not affect cell cycle regulation, do you think the cell will become cancerous? Explain.

 \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

 \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

17. **Connect** – Some anticancer drugs prevent microtubules from forming spindle fibers. Why do you think these drugs might be effective treatments for cancer?

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18. Go to your online student edition of the text and go to “interactive review” and then on “self-checks”. Take the 5-3 Self-Check Quiz and record your score below. Write out the most difficult question and answer next to your score.