SNC2D1- Biology Homework (updated Mar 2017)

Name: _____ Date: _____

Worksheet 6: Cancer and Cell Cycle (ON Science 10 p.42-44)

1) Match the description with the key terms below.

apoptosis benign tumour cancer carcinogen malignant tumour metastasis mutation necrosis tumour

Key Terms	Description
	An abnormal clump or group of cells that reduces the normal functions of other body tissues by "invading" it
	Changes to a cell's DNA
	Tumour that is not cancerous and does not spread to other tissue
	An agent that can cause DNA mutation
	Cancer cells can break away from the original (primary) tumour and move to a different part of the body.
	Tumour that is cancerous and does spread to other tissue
	Cells with abnormal genetic material that are dividing uncontrollably
	Programmed cell death or cell suicide.
	Cell death due to unexpected and accidental cell damage.

2) What are **two reasons** cells leave the cell cycle?

3) Why might a person who has a skin cancer later develop a tumour on her lungs?

4) Describe some **differences** between a **benign tumour** and a **malignant tumour**.

5) What is a **carcinogen**? Give **some examples** of **carcinogens** that may be present in your everyday life.

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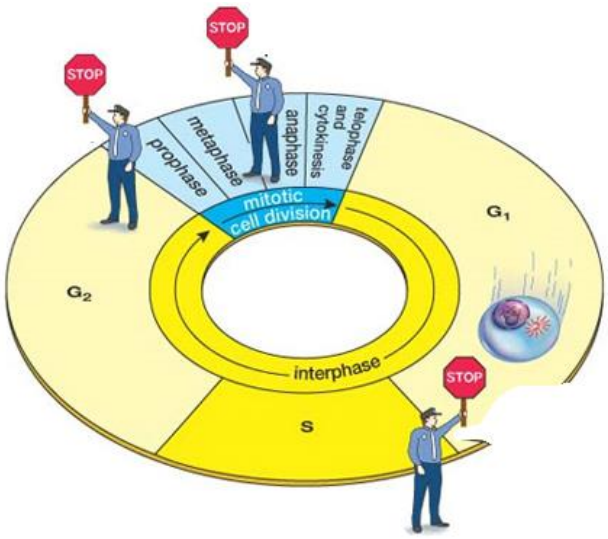
6) The diagram on the right shows possible **checkpoints** in the cell cycle. Suppose a **mutation** occurred during **DNA replication**.
(a) At which checkpoint might this be detected?



(b) What could happen if the mutation is not detected?

7) Match the description with the key terms below.

biophotonics chemotherapy surgery radiation therapy vaccine

Key Terms	Description
	The use of chemicals to slow down cancer
	The use of chemicals to boost your immune system to fight cancer.
	The physical removal of tumours
	The use of radiation to treat cancer
	The technology of using light energy to diagnose, monitor and treat living cells and organisms

8) Why might doctor be concerned to find cancer cells in patient's blood?

9) Why might it be easy to **overlook cancer** in its early stages?

10) Why might there be a risk of **cancer recurring**, even when surgery is performed to remove a malignant tumour?

11) Why a doctor might choose to treat a cancer using **chemotherapy** instead of surgery?

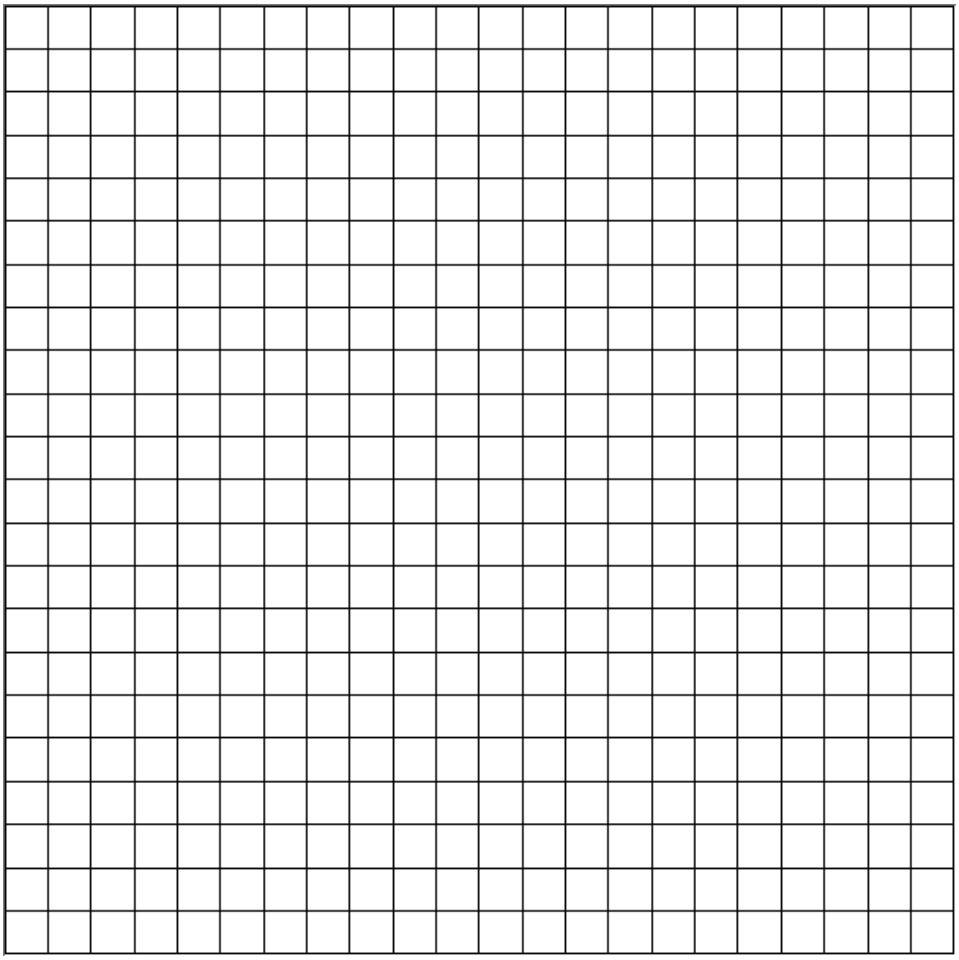
SNC2D1

Data analysis investigation 1-C: "Does the Patient Have Cancer?"

Complete using the textbook ON Science 10 page 50.

Question:
What will you report back to the physician who requested the test?

Organize the Data:
Draw a line graph showing the rate of cell division of normal cells and the patient's cells. Put time on the x-axis and population size on the y-axis. After you have completed your hard copy, create a graph using graphing software (e.g. excel).



Analyze and Interpret:

1. Compare the rates of cell division in the patient sample and the normal sample. How would you interpret the graph?

Conclude and Communicate:

2. Write a one- or two-sentence summary of your findings and your interpretation for the physician.

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