1. What do eukaryotic cells have that prokaryotic cells do not? \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
2. Passive transport is the movement of particles \_\_\_\_\_\_\_\_\_\_ the concentration gradient without the use of energy, whereas active transport requires energy to move particles \_\_\_\_\_\_\_\_\_\_\_\_\_\_ the concentration gradient.
3. Create the environments describe by letters A, B, and C. Draw an arrow to show which direction osmosis (the movement of water from a high concentration to a low concentration) will occur.
	1. Hypotonic Solution b. Hypertonic Solution c. Isotonic Solution



\_\_%

solutes

\_\_%

solutes

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solutes

1. Compare and contrast Facilitated Diffusion and Active Transport

|  |  |  |
| --- | --- | --- |
| Facilitated Diffusion | Both | Active Transport |
|  |  |  |
|  |  |  |
|  |  |  |

1. Name the two main phases of the Cell Cycle. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ & \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
2. List the 3 phases of Interphase and describe what occurs in each phase.
	1. \_\_\_\_\_\_\_\_\_\_\_ - \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
	2. \_\_\_\_\_\_\_\_\_\_\_ - \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
	3. \_\_\_\_\_\_\_\_\_\_\_ - \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
3. Write the 4 stages of mitosis in order.

**Use the word bank for the numbers 8-12. You will not use every word.**

**Word Bank**

Centrioles

Chromosomes

Chromatin

Daughter cells

Middle

Nuclei

Sister chromatids

1. During the prophase stage of mitosis, the DNA condenses to

form \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.

1. During the telophase stage of mitosis, two \_\_\_\_\_\_\_\_\_\_\_\_ are formed.
2. By the end of cytokinesis, the cell has completely divided into 2

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.

1. During the anaphase stage of mitosis, the chromosomes separate into

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.

1. During the metaphase stage of mitosis, chromosomes line up in the

 \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ of the cell .

1. Why is it important for the chromosomes to be condensed and align in the middle of the cell during the metaphase stage of mitosis?
2. Name 2 reasons why cells must divide.
3. What is the result each time a cell completes the cell cycle? \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
4. What is the purpose of checkpoints in the cell cycle?
5. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ is the uncontrolled growth and division of cells due to a failure in the regulation of the cell cycle.
6. Define carcinogen and provide 3 examples.
7. Label the cell below.



What phase of mitosis is this cell in? \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

1. What phase of the cell cycle is the cell below in? 21. Label the phase of mitosis for the diagram below.

 