

Mitosis

Nucleus- _____ the cell.

Nucleolus- Makes _____ and maybe more than _____ in the nucleus.

Chromosomes- Determines what _____ you will have and passes information from _____ to _____

Cell Membrane- Gives the cell _____ and controls what moves _____ and _____ of the cell.

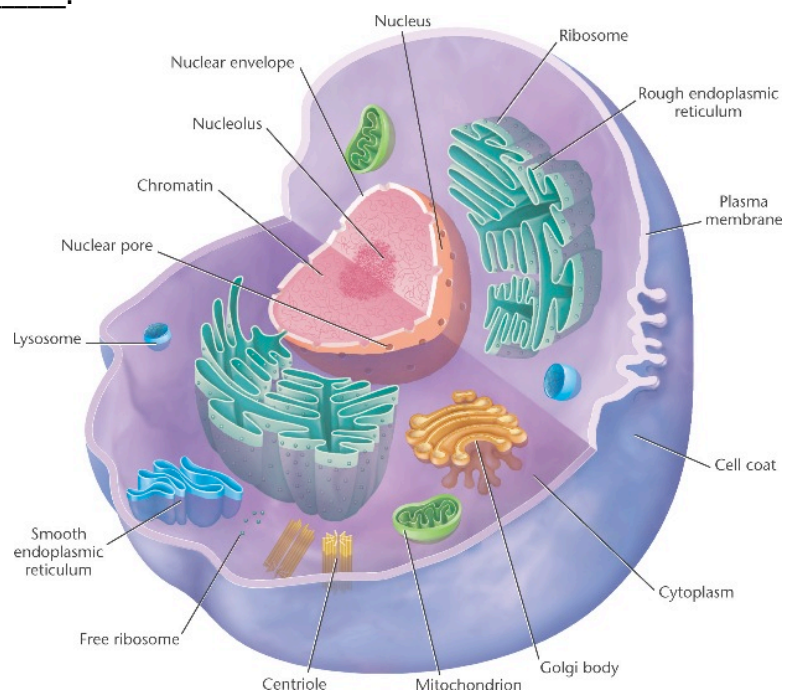
Cytoplasm- _____ material where _____ are found.

Vacuole- _____ filled and may store _____, _____, _____ or _____

Mitochondria- Produce _____ when food is broken down. Known as the _____ of the cell.

Ribosomes- Where _____ are made. There may be _____ in a cell.

Centrioles- Found only in _____ cells and are used in cell _____.



What is mitosis?

What is the purpose of mitosis?

Why do cells divide?

Prokaryotic Cell Division

Bacteria produce by _____ . This is simple

because there are no _____ . It

begins with _____ replication and

the cell _____

and will result in two identical

_____ .

Eukaryotic Cell Division

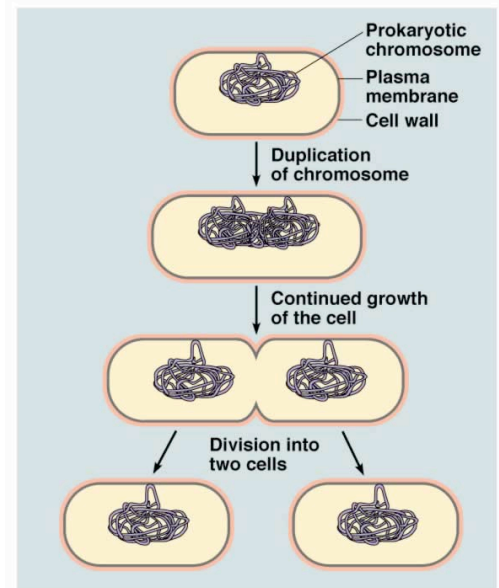
Mitosis

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Meiosis

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Describe each part of the cell cycle:

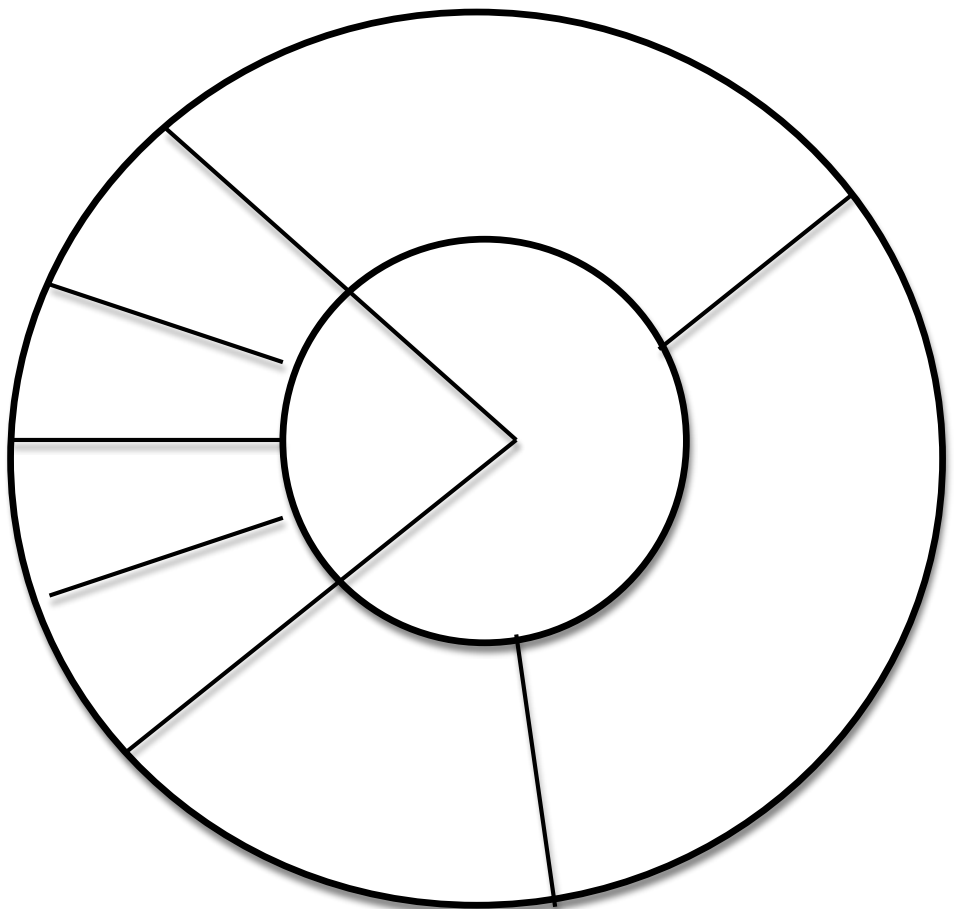
G1-

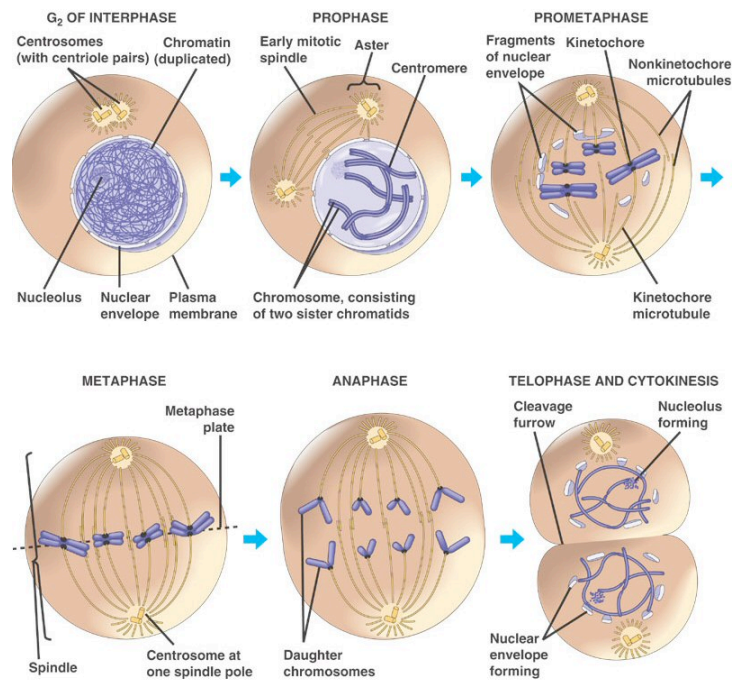
S-

G2-

M-

Fill in the cell cycle

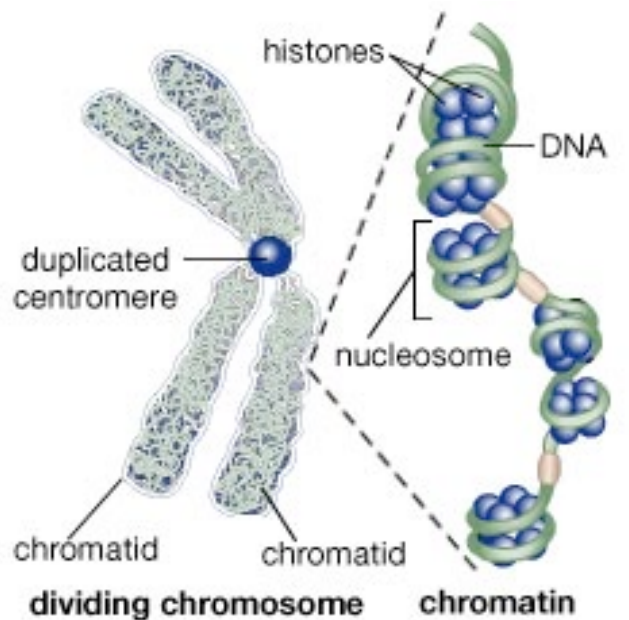




DNA and Cell Division

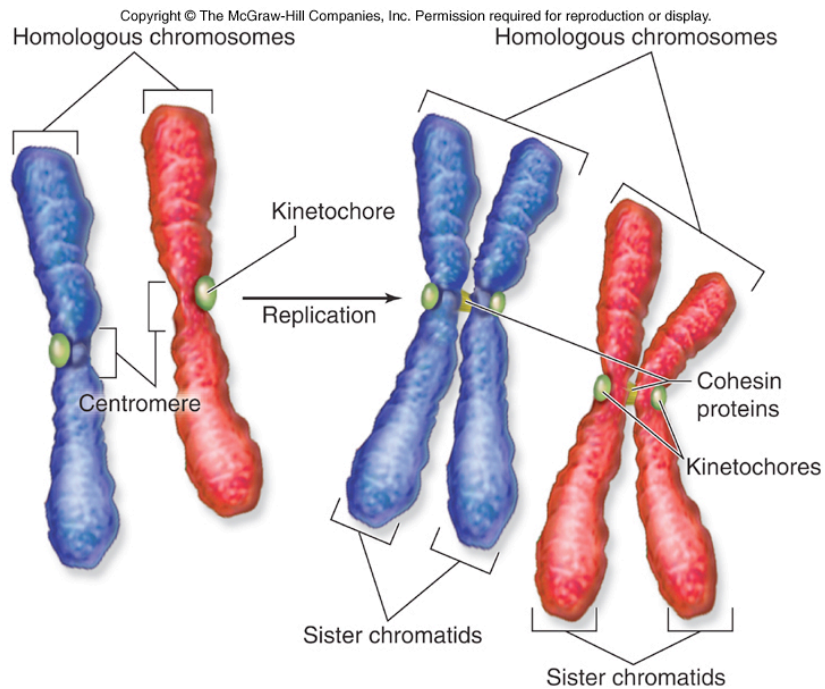
- During cell division, genetic material is _____
- DNA is divided into long chains called _____
- Chromosomes are wrapped around proteins called _____
- _____: the unit wrapped around histones.

Two copies of each chromosome are called sister chromatids



Chromosome Structure

- Normally the chromosomes are all spread out and unidentifiable. This is called _____
- The two chromosomes are called sister _____
- The chromatids are held together at the _____.



The Cell Cycle

- The length of time a cell takes in the cycle depends on the type of cell. Usually the more specialized, the less likely they are to _____
- Red blood cells are replicated at a rate of _____ million/sec
- Nerve cells do not usually _____ and remain in the G₀ stage until they _____.

Chromosome number is maintained because the DNA is _____ and then divides.

The Spindle Apparatus

- Consists of _____ sets of microtubules
- Move the _____ during mitosis.
- In both plants and animals the spindle fibers originate from _____. In animal cells the centrosomes are _____.

Mitosis is divided into _____ phases:

Describe Interphase-

Is Interphase part of mitosis?

Nuclear envelope visible-YES or NO

Chromosomes visible- YES or NO

Nucleolus visible- YES or NO



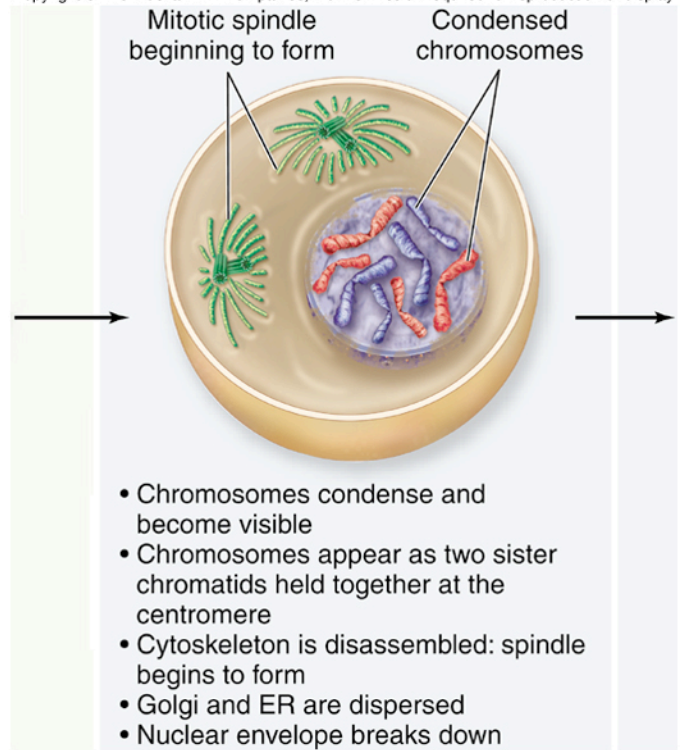
Prophase

Chromosomes _____

Centrioles move to the _____ of the cell

Spindle apparatus is _____

Nuclear envelope _____

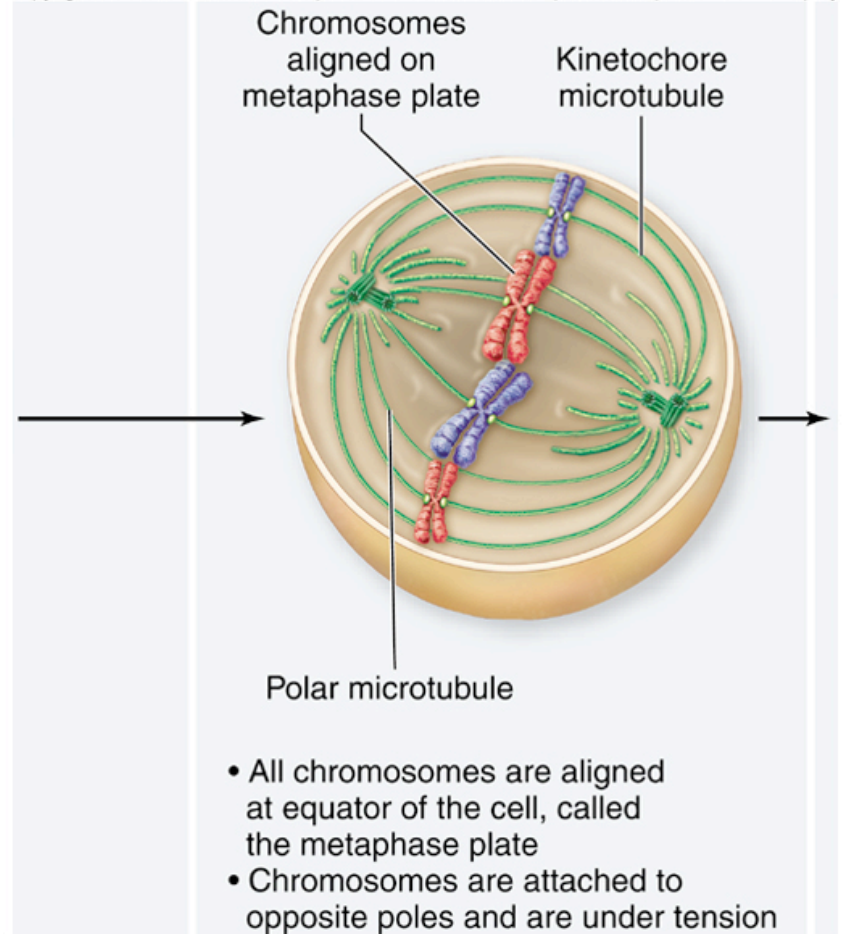


Centrioles and centrosomes are the same

Metaphase

Chromatids will _____ up on the equator

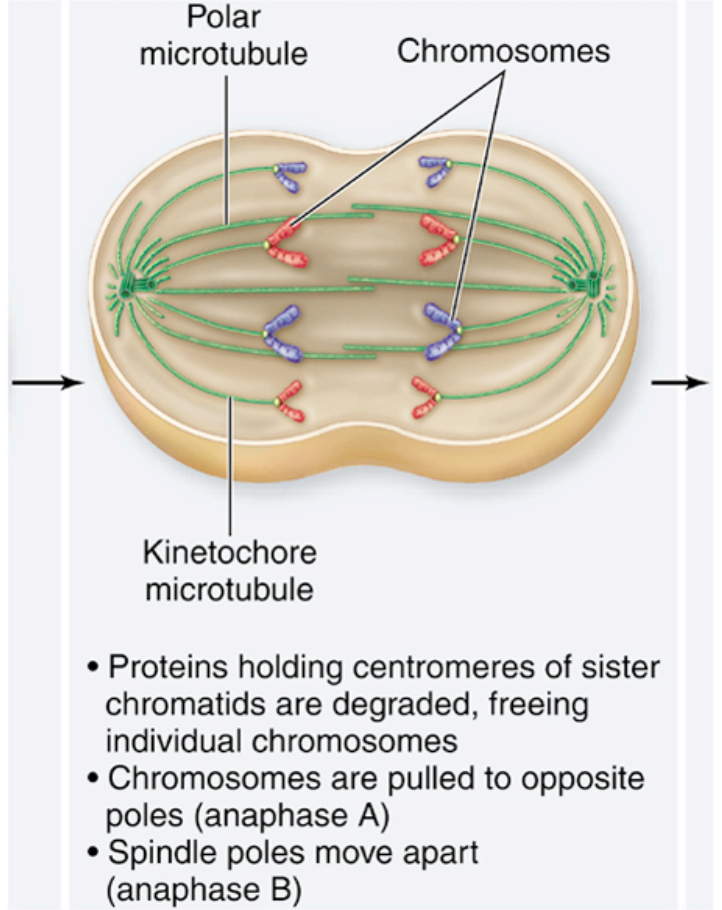
_____ connect to centromeres



Anaphase

_____ pull the
sister chromatids

Chromosomes begin to move



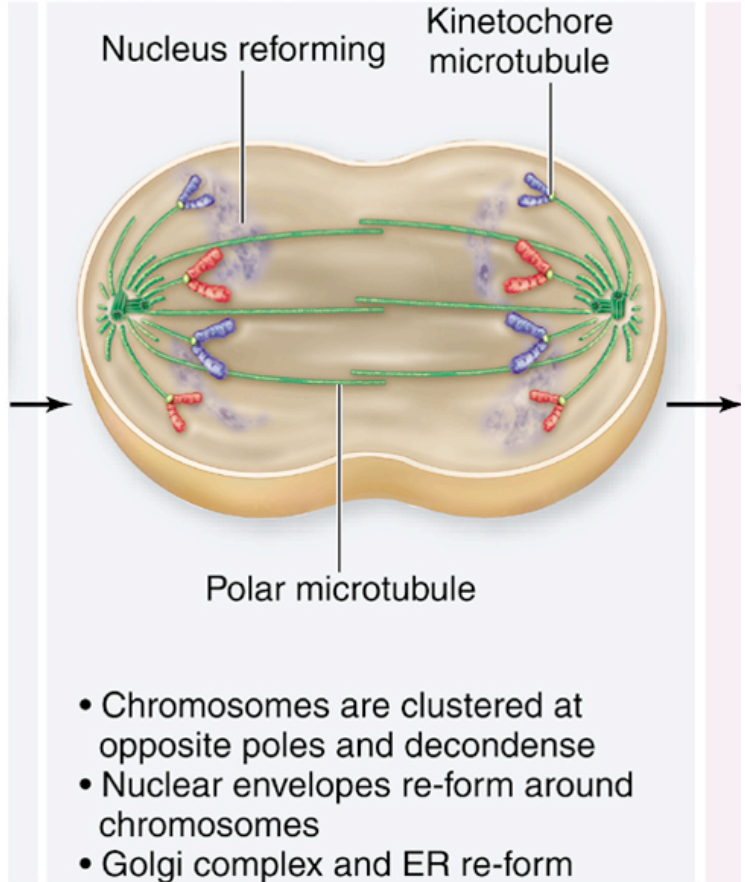
Telophase

Spindle apparatus _____

Nuclear envelope _____

Chromosomes _____

_____reappears

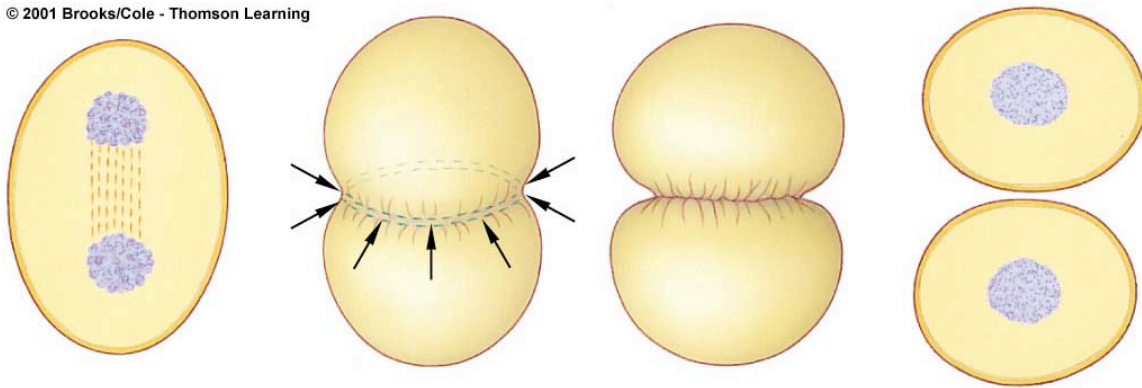


Cytokinesis

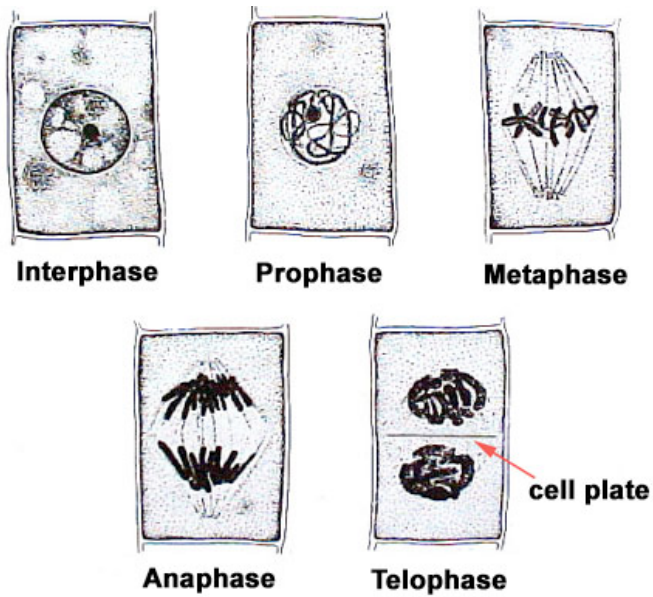
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Animal cell with cleavage furrow

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Plant cell with cell plate



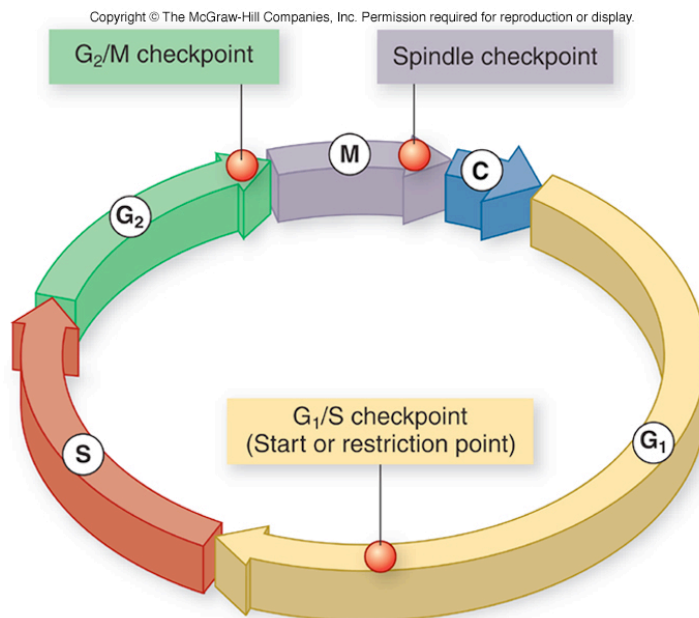
One parent → _____

Chromosome number remains the _____ from one generation to the next, hopefully.

	Plant cell	Animal Cell
Centrioles		
Cytokinesis		

Control of the cell cycle

- 1.
- 2.
- 3.



What is the role of tumor suppressor genes and what happens if they are mutated?