

SI #11 LIFE 1010-01

1) Complete the table below.

Process	Cell Types Created	# of Divisions	# of Cells Created	Created Cell Ploidy	Crossing Over?
Mitosis					
Meiosis					

2) Recall your knowledge from the beginning of the semester and list the 2 parts of Cell Theory.

3) Discuss the difference between gametic and somatic cells.

4) Draw a simple diagram of the cell cycle for a human cell below and include all checkpoints?

- 5) In each of the boxes below, draw what the cell might look like during each phase of mitosis. $2n=4$

Prophase	Prometaphase	Metaphase
Anaphase	Telophase	Cytokinesis

- 6) What phase does a cell spend most of its life in?

- 7) What cells can you think of that might stay in the **G₀** phase for the rest of their life after reaching maturity?

- 8) How many chromosomes do humans have in a diploid state? What about a haploid state?

9) Complete the table below regarding important structures of mitosis.

Centrosome	
Chromatin	
	One DNA strand of a replicated chromosome
	Specific Site of microtubule attachment to centromere
Sister Chromatids	
	The entire structure including a centrosome and microtubules which line up and help separate sister chromatids

10) If an organism has a diploid state of $2N=72$, how many chromosomes will be found in its gametes?

Medical Matters

A cell is attempting to undergo mitosis. However, many of the genes that regulate cell proliferation have mutated due to being exposed to too much UV radiation. These mutations have caused the cell to skip the checkpoints that are essential to the cell cycle. What can we consider this cell to be now?