**Mitosis – Meiosis practice.**

*Directions: at the top of each page of cell division (mitosis on pg. 2 and meiosis on pg. 3), you have three homologous chromosomes for the organism in question. Drag the chromosomes and copy/paste them as necessary to fill the circles (nuclei) with the correct number of chromosomes. Remember, mitosis duplicates once and divides once; and meiosis duplicates once and divides twice which is why we call it “reduction division”.*

*In the fields to the right, provide the phase of the cell cycle you depict in your nuclei and provide a list (bullet points are fine) of major events that happen within the cell during that phase.*

*Do the same for mitosis and meiosis, then answer the questions on the reflection page on the final page of this document.*

***How to use this document…***

*Use this as a way to test yourselves and simplify the processes by looking at the similarities and differences between meiosis and mitosis. We will go over this in detail so have this document completed.*

Chromosome 1 Chromosome 2 Chromosome 3

Homologous chromosomes are a pair. One comes from the maternal parent, and the other from the paternal. Humans have 23 pairs of these. When paired, we call this state “diploid” which is how all your body (or somatic) cells exist.

 Mitosis phase:

 Major Events:

 Mitosis phase:

 Major Events:

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 Major Events:

Chromosome 1 Chromosome 2 Chromosome 3

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 Meiosis phase:

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 Meiosis phase:

 Major Events:

 Meiosis phase:

 Major Events:

 Meiosis phase:

 Major Events:

**Mitosis Meiosis Reflection Questions**

*Directions: Answer the questions below* ***in a different color*** *and type your responses in the space between questions. Use the notes from the mitosis and meiosis lessons that you watched over the last two days.*

1. Name the two places in human beings that meiosis occurs.

2. Where does mitosis occur in humans?

3. What is the end product(s) of meiosis?

4. What is the end product(s) of mitosis?

5. From what you have seen in the initial material on mitosis and meiosis, why are the end products different in each process? *(hint: think where each occurs…)*

6. What is the ploidy (haploid or diploid) of gametes, aka sex cells, aka sperm and/or egg?

7. What is the ploidy (haploid or diploid) of somatic, aka body cells?

8. Explain your answer more to number 7 as to why you chose this state of ploidy.

9. Which process, meiosis or mitosis, provides genetic variation in the product(s)?

10. In your answer to 9, where does this variation come from (in other words, in which phase is it created, AND HOW is it created)?