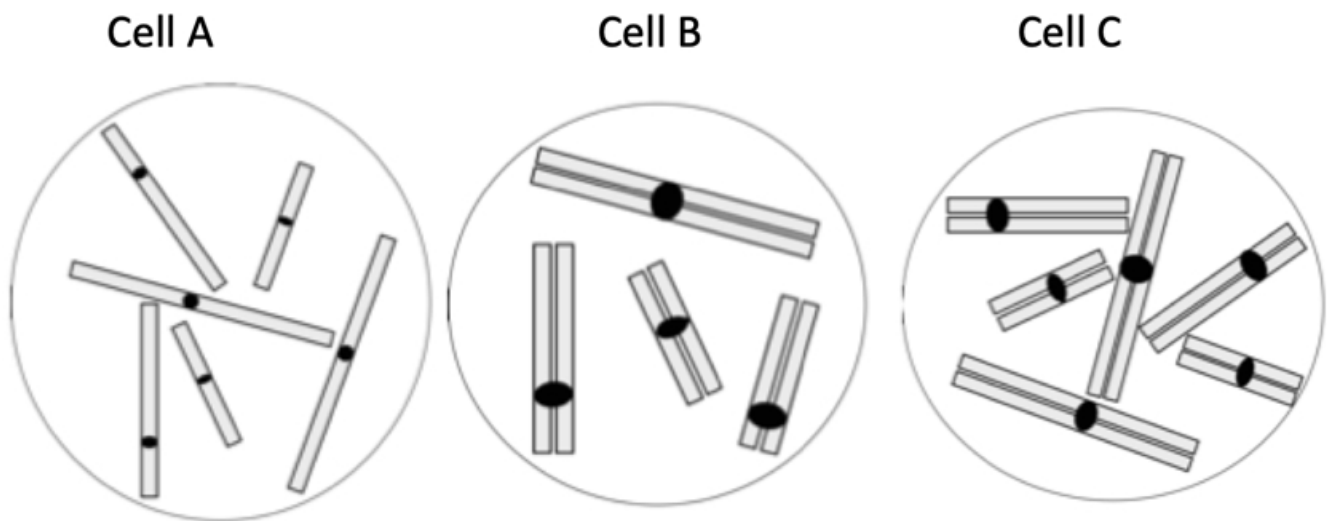


Name: _____

Ploidy Worksheet - Individual

Consider the cells represented below:



1. Which cells are 1c? **None.** (Cell B prior to DNA replication would be 1c)
2. Which cells are 2c? **Cell A and Cell B.** (Both have two genomes/two copies of their genome)
3. Which cells are neither 1c nor 2c? **Cell C.** (It is 4c)
4. Which cells are haploid (1n)? **Cell B.** (It has “one of each chromosome type”)
5. Which cells are diploid (2n)? **Cell A and Cell C.** (The have “two of each chromosome”).
6. Which cells are neither haploid nor diploid? **None.**
7. How many chromosomes does cell A have? **Six.**
8. How many chromosomes does cell B have? **Four.**
9. Which cells are $2n=6$? **Cell A and Cell C.**
10. Which cells could begin mitosis right away (and what is your rationale)? **Cell B and Cell C.**
(Assuming they have passed all the checkpoints, which is not something we are considering here, both cells have undergone DNA replication and could therefore start mitosis).

11. Which cells could begin meiosis right away (and what is your rationale)? Cell C. (Assuming it has passed all the checkpoints, which is not something we are considering here, Cell C is the only one that has undergone DNA replication and is not haploid – haploid cells cannot do meiosis, as their chromosomes do not have homologs with which to pair up).
12. On the back of the sheet, draw a diagram of a cell that is $3n=6$ before DNA replication. Example (seen in the video tutorial):

