**Questions to answer:**

1. Explain how asexual reproduction is different from sexual reproduction.
2. Explain what happens during crossing over and when it occurs in meiosis.
3. How is metaphase I different from metaphase of mitosis?
4. Explain why sexual reproduction increases variation among offspring much more than asexual reproduction does.
5. How many possible genetic variations can be produced during meiosis and sexual reproduction?
6. How is sexual reproduction related to gender determination in mammals?
7. If the progenitor cell of a gamete has 12 pairs of chromosomes during G1 of interphase, how many chromosomes will the following cells have?
   1. after S phase of interphase.
   2. a daughter cell immediately following cytokinesis I of meiosis.
   3. a daughter cell during anaphase II of meiosis.
   4. a daughter cell immediately following cytokinesis II of meiosis.

**Things you should make sure you understand:**

**(feel free to ask questions about them in class)**

* The differences in sexual life cycles shown in plants, fungi, and animals.
* The relationship between homologous pairs of chromosomes.
* How meiosis evolved and why it bears a strong resemblance to mitosis.
* The major differences between mitosis and meiosis.
* The process of karyotyping and why/when it is used