1. Fruit flies have a diploid number of 8. Honeybees have a diploid number of 32. Assuming no crossing over, is the genetic variation among offspring from the same two parents likely to be greater in fruit flies or honeybees? Consult chapter 13. Concept 13.4. Explain.

2. Discuss in a short paragraph the process in which the events of prophase I of meiosis I produce genetic variability in the new cells that are ultimately formed. Consult Chapter 13. This is addressed in section 13.3, figure 13.8, and section 13.4. Include the following terms in your explanation: Use your own word (do not copy from textbook).
- tetrad
- genetic recombination
- synapsis
- sister chromatids
- crossing over
- non-sister chromatids
- chiasma

(You may use a drawing to enhance your explanation, but a drawing alone will not suffice.)

3. Dog sperm contain 39 chromosomes. What are the haploid and diploid number for dogs?

4. A human cell has 46 total (diploid number) = 23 pairs of chromosomes. Following mitosis, the daughter cells would each have a total of _____ chromosomes. After meiosis I, the two daughter cells would have _____ chromosomes, and after meiosis II _____ chromosomes. Remember, a chromosome MAY consist of 2 sister chromatids, but is still considered 1 chromosome.
   a. 46, 46, 46
   b. 46, 23, 23
   c. 23, 23, 23
   d. 46, 12, 12

5. The process of meiosis produces 4 cells with non-identical chromosomes. The recombination of genetic material occurs during:
   a. telophase I
   b. prophase I
   c. metaphase II
   d. prophase II

6. Some organisms are capable of asexual or sexual reproduction. Under favorable conditions, reproduction proceeds asexually. When environmental conditions become more stressful reproduction switches to a sexual mode. Why?
   a. sexual reproduction is simple and rapid which allows larger number of offspring to be produced
   b. sexual reproduction requires 2 individuals who can provide nutrient support during stress
   c. asexual reproduction requires more energy and sexual reproduction less
   d. sexual reproduction produces individuals with new combinations of recombined chromosomes which increases genetic diversity of the population.

7. The stage of meiosis where cells become haploid. Remember, a replicated chromosome consists of 2 sister chromatids, but is still considered a single chromosome.
   a. Prophase I
   b. Prophase II
   c. Anaphase I
   d. Anaphase II

Try this (not homework)  http://www.biologycorner.com/quiz/qz_meiosis.html meiosis quiz