**Chapter 10 - Meiosis and Sexual Life Cycles**

1. **Contrast and compare** the advantages and disadvantages of asexual and sexual reproduction.

2. **Discuss** which type of reproduction is the “best” strategy for continuing a species through time.

Be sure to defend and explain your logic.

3. A cattle breeder claims that the future offspring from a prize bull and cow will be identical

to the award winning offspring they’ve already produced. In fact, he’s willing to sell you an

investment opportunity on their next offspring. Assuming you had the money, **discuss** why you

would or would not invest it this way.

4. **Discuss** how does the karyotype of a human female differs from that of a human male.

5. **Describe** under what circumstances crossing over during meiosis would NOT contribute to

the genetic variation among daughter cells.

6. **Discuss** the statement “children should always look just like their parents” from what you

know from this chapter.

7. Describe in detail the three sources of genetic variation in meiosis.

a.

b.

c.

8. Here is a fun exercise to see just how unique you are. Pull out a calculator and lets find out the probability of creating you just the way you are.

a. The number of different gametes that can be formed because of independent assortment is

2n, where n = the number of homologous pairs

Therefore, since humans have 46 chromosomes or 23 homologous pairs, what is the number of possible gametes that can be formed due to independent assortment of chromosomes?

b. Now, this is the number of unique gamtes your mom could have made. Your father could have made the same number. To see the effect of random fertilization, multiply the number of gametes one parent could make by the number of unique gametes the other parent could make.

Your answer should be in the *trillions*, and all of this is *without* crossing over. See how special you are?

 