Comparing Mitosis and Meiosis

1. Define and explain the purpose(s) of mitosis.

2. What is meiosis?

Gametes (sex cells) only have half the genetic information as other body cells.
3a. What are the female gametes called? _____ male? _____
3b. Which process produces gametes, mitosis or meiosis? _____
3b. How many chromosomes do human body cells have? _____
3c. How many chromosomes do human gametes have? _____

5. A horse has 64 chromosomes in its body cells. After one round of mitosis, how many chromosomes will its body cells have? _____ After one round of meiosis, how many chromosomes will its sperm cells have? _____.

6. Explain why gametes must be haploid.

7. *THINK:* Could mitosis produce gametes? Why or why not?

7. Why must DNA replicate before cells divide (in mitosis AND meiosis I)? You may wish to diagram the processes without DNA replication to help you answer this question.

Description	Mitosis	Meiosis
Involved in asexual or sexual reproduction?		
Are daughter cells clones of the parent?		
# of cell divisions		
# of daughter cells produced		
Type of daughter cells? (body cells or gametes)		
Diploid or haploid daughter cells?		