

Chapter 8

1. If an intestinal cell in a grasshopper contains 24 chromosomes, a grasshopper sperm cell would contain \_\_\_\_ chromosomes.  
a. 3    b. 6    c. 12    d. 24    e. 48
2. Which of the following phases of mitosis is essentially the opposite of prophase in terms of nuclear changes?  
a. telophase    b. metaphase    c. S phase    d. interphase    e. anaphase
3. A biochemist measured the amount of DNA in cells growing in the laboratory and found that the quantity of DNA in a cell doubled:  
a. between prophase and anaphase of mitosis  
b. between the G1 and G2 phases of the cell cycle  
c. During the M phase of the cell cycle  
d. between prophase I and prophase II of meiosis  
e. between anaphase and telophase of mitosis
4. Which of the following is NOT a function of mitosis in humans?  
a. repair of wounds    b. growth  
c. production of gametes from diploid cells  
d. replacement of lost or damaged cells  
e. multiplication of somatic cells
5. A micrograph (picture) of a dividing cell from a mouse showed 19 chromosomes, each consisting of 2 sister chromatids. During which of the following stages of cell division could this picture have been taken?  
a. Prophase of mitosis    b. telophase II of meiosis    c. prophase I of meiosis    d. anaphase of mitosis  
e. prophase II of meiosis
6. Cytochalasin B is a chemical which disrupts microfilament formation. This chemical would interfere with:  
a. DNA replication    b. formation of the mitotic spindle    c. cleavage  
d. formation of the cell plate    e. crossing over
7. It is difficult to observe individual chromosomes during interphase because:  
a. the DNA has not been replicated yet  
b. they have uncoiled to form long, thin strands  
c. they leave the nucleus and are dispersed to other parts of the cell  
d. homologous chromosomes do not pair up until division starts  
e. the spindle must move them up to the metaphase plate before they become visible
8. A fruit fly somatic cell contains 8 chromosomes. This means that \_\_\_\_ different combinations of chromosomes are possible for its gametes.  
a. 4    b. 8    c. 16    d. 32    e. 64