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|--------------------|-------------------------|
| A. mitosis | E. cancer |
| B. malignant tumor | F. diploid cells |
| C. haploid cells | G. sexual reproduction |
| D. gametes | H. asexual reproduction |

- C 1. meiosis results in the formation of these cells, containing both egg and sperm cells
- E 2. a disease in which some cells lose their ability to control their rate of division
- B 3. a mass of cancer cells
- D 4. produced by the process of meiosis
- H 5. reproduction by simple cell division only producing offspring identical to parents
- F 6. cells containing all chromosomes
- G 7. reproduction combining genetic material to produce offspring different from parents
- A 8. cell nucleus division in which chromosomes divide to form two identical cells

True (T) or False (F)? If False, cross out part that is untrue and write it in the space under the statement.

- F 9. A cell's DNA is replicated during the ~~M~~^S phase of the cell cycle.
- T 10. Another word for chromosome is chromatid, which is an exact copy of the original chromosome.
- T 11. The stage in which a cell divides is called the mitotic phase.
- F 12. In meiosis, cellular division occurs ~~three times~~^{twice}.
- F 13. Meiosis usually results in the formation of four genetically ~~identical~~^{different} cells.
- T 14. Plant and animal cells have many differences. One difference is that plant cells have a cell plate.
- F 15. Crossing-over rarely occurs in meiosis because ~~homologous chromosomes~~^{tetrads} rarely form during mitosis.
- T 16. Chromosome number is not changed during mitosis.
- T 17. Two members of a pair are called homologous chromosomes.

Completion

Write a word or words to complete the statements below.

18. Cells divide to repair tissues, to grow, and to **reproduce**.
19. A **gene** is a piece of DNA that codes for a certain trait such as eye color.
20. **Chromatids** only exist when a chromosome replicates itself before cell division.
21. Humans have 23 homologous pairs of chromosomes, giving them a total diploid number of **46** chromosomes.
22. Members of most homologous pairs look alike, but the corresponding **genes** on the two homologous chromosomes are not always identical.
23. The phase of mitosis in which chromosomes line up along the middle of the dividing cell is called the **metaphase**.

Multiple Choice. Identify the letter of the choice that best completes the statement or answers the question.

 B 24. What event happens during interphase?

- A. Centromeres divide.
- B. Metabolic processes are carried out by the cell.
- C. Spindle fibers start forming.
- D. Centrioles begin to show up.

 C 25. Which of the following statements are true about the events of the cell cycle?

- A. The longest phase is the M phase.
- B. Not much happens during the G₁ and G₂ phases.
- C. The G₁, S, and G₂ phases are called the interphase.
- D. During cytokinesis, DNA replicates.

 D 26. The four main steps of mitosis are _____?

- A. the diploid phase , haploid phase , anaphase, and the telophase.
- B. the metaphase, prophase, telophase and cytokinesis.
- C. the mitotic phase, interphase, anaphase, and cytokinesis.
- D. the prophase, metaphase, anaphase and telophase.

 C 27. Which of the following statements are true about the events of the cell cycle?

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- C. The G₁, S, and G₂ phases are called the interphase.
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Labels Write the correct term from the list below to label the diagrams.

mitosis **crossing over** **centromere** **sister chromatid** **centriole**
meiosis **replication** **centromeres** **sister chromatids** **centrioles**

28. In **Figure 9-1**, **A** is the centromere.
29. In **Figure 9-1**, the parts labeled **B** are the sister chromatids.
30. **Figure 9-2** represents the process called crossing over.

Short Answer:

31. Prophase I is a stage of meiosis during which crossing over occurs.
32. There are 2 sets of chromosomes in a diploid cell.
33. Mitosis results in two cells. Meiosis results in 4 cells.
34. If gametes of a species had the same number of chromosomes as the species' body, the offspring would have more chromosomes than their parents had. The species' chromosome number would not be constant.