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Crash Course Biology #40: Bioinformatics: How Data Saves Lives

Name: _____ Date: _____

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1. The process of cell division that reduces the chromosome number by half is called _____.
2. Meiosis consists of _____ rounds of cell division.
3. The two main stages of meiosis are _____ and _____.
4. During _____, homologous chromosomes pair up and exchange genetic material in a process called crossing over.
5. The paired homologous chromosomes align at the cell's equator during _____.
6. The phase in which homologous chromosomes are pulled apart to opposite poles is _____.
7. Meiosis II is similar to mitosis because it involves the separation of _____.
8. At the end of meiosis, _____ haploid cells are produced from a single diploid cell.
9. In males, meiosis produces four _____, while in females, it typically produces one _____ and three polar bodies.
10. The random distribution of homologous chromosomes to daughter cells is known as _____.
11. Genetic variation in meiosis is introduced through two key processes: _____ and _____.
12. A cell that has two sets of chromosomes is called _____, while a cell with only one set is called _____.
13. The exchange of genetic material between homologous chromosomes occurs during _____.
14. The failure of chromosomes to separate properly during meiosis is called _____, which can lead to conditions such as Down syndrome.
15. The structure that holds together homologous chromosomes during crossing over is called the _____.

Crash Course Biology #40: Bioinformatics: How Data Saves Lives – KEY

1. The process of cell division that reduces the chromosome number by half is called **meiosis**.
2. Meiosis consists of **two** rounds of cell division.
3. The two main stages of meiosis are **Meiosis I** and **Meiosis II**.
4. During **prophase I**, homologous chromosomes pair up and exchange genetic material in a process called crossing over.
5. The paired homologous chromosomes align at the cell's equator during **metaphase I**.
6. The phase in which homologous chromosomes are pulled apart to opposite poles is **anaphase I**.
7. Meiosis II is similar to mitosis because it involves the separation of **sister chromatids**.
8. At the end of meiosis, **four** haploid cells are produced from a single diploid cell.
9. In males, meiosis produces four **sperm cells**, while in females, it typically produces one **egg cell** and three polar bodies.
10. The random distribution of homologous chromosomes to daughter cells is known as **independent assortment**.
11. Genetic variation in meiosis is introduced through two key processes: **crossing over** and **independent assortment**.
12. A cell that has two sets of chromosomes is called **diploid**, while a cell with only one set is called **haploid**.
13. The exchange of genetic material between homologous chromosomes occurs during **crossing over**.
14. The failure of chromosomes to separate properly during meiosis is called **nondisjunction**, which can lead to conditions such as Down syndrome.
15. The structure that holds together homologous chromosomes during crossing over is called the **synaptonemal complex**.

15 Questions

Answer Key Included

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