SBI3C -Meiosis, Gametogenesis, Genetic Recombination, Errors in Meiosis

Meiosis

Somatic cell (\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_) are diploid (2n). They \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_. Human somatic cells \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.

Meiosis is a special type of cell division that \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.

Meiosis results in the production of reproductive cells called \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.

Gametes are \_\_\_\_\_\_\_\_\_\_\_ (n). They contain only \_\_\_\_\_ copy of each chromosome. Human gametes contain \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.

Each human sperm or egg cell contains 1 \_\_\_\_\_\_\_\_\_\_\_\_\_ that determines the \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.

22 autosomal \_\_\_\_\_\_\_\_\_\_\_\_\_\_ determine everything else.

Meiosis involves the following phases

1)

2)

3)

4)

5)

6)

7)

8)

Gametogenesis

This is the production of \_\_\_\_\_\_\_\_\_\_. \_\_\_\_\_\_\_\_\_\_\_ occurs in the \_\_\_\_\_\_\_\_ and results in four non-identical \_\_\_\_\_\_\_\_\_\_\_\_cells. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ occurs in the \_\_\_\_\_\_\_\_\_\_\_\_\_\_ and results in the production of \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ viable egg and \_\_\_\_\_\_\_ non-viable eggs (polar bodies). Polar bodies results from and \_\_\_\_\_\_\_\_\_ division of cytoplasm (there is only enough cytoplasm to support \_\_\_\_ viable egg).

Genetic Recombination

This is the rearrangement of \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ during meiosis. This contributes to \_\_\_\_\_\_\_\_\_\_\_ among generations (the variation can be a \_\_\_\_\_\_\_\_ or \_\_\_\_\_\_ in the environement). Two examples of genetic recombination are: 1) \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ or 2)\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.

**Crossing Over** occurs during \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_, between \_\_\_\_\_\_ chromosomes in a \_\_\_\_\_\_\_. Genetic information is exchanged between chromosomes of \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ and \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ origin. This usually occurs between \_\_\_\_\_\_\_\_\_\_\_ times per chromosomes (depending on length).

**Independent assortment** occurs during \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_. When chromosomes begin to line up, the chromosomes of \_\_\_\_\_\_\_\_\_\_ and \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ origin do not necessarily \_\_\_\_\_\_\_\_\_\_ on the same side. This \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ the maternal and paternal chromosomes into different \_\_\_\_\_\_\_\_\_\_\_\_\_\_.

Errors in meiosis

Errors occur when the chromosomes \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_. This is known as \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ and results in gametes with \_\_\_\_\_\_\_\_\_\_\_\_ or \_\_\_\_\_\_\_\_\_\_\_\_\_\_ than the haploid number of chromosomes. For example: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ is one extra chromosome – Down’s syndrome. \_\_\_\_\_\_\_\_\_\_\_\_\_ are organisms with more than \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ (e.g. triploidy = 3n). This is common in \_\_\_\_\_\_\_\_\_\_\_\_\_ and \_\_\_\_\_\_\_\_\_\_\_\_sterile offspring.

Practice:

In your text book: read pages 113 – 116. Highlight and new vocabulary below. Then create a T-chart and compare mitosis with meiosis.