

# Karyotype Lab

Analysis questions over our patient's karyotype (choose all odd or all even numbers):

PATIENT LETTER/NUMBER \_\_\_\_\_

Total number of chromosomes: \_\_\_\_\_

Total number of autosomes: \_\_\_\_\_

Total number of sex Chromosomes: \_\_\_\_\_

Patient's sex ( one):

Male                       Female

Does the karyotype show the presence of a mutation?

Yes                       No

**Diagnosis:** \_\_\_\_\_

PATIENT LETTER/NUMBER \_\_\_\_\_

Total number of chromosomes: \_\_\_\_\_

Total number of autosomes: \_\_\_\_\_

Total number of sex Chromosomes: \_\_\_\_\_

Patient's sex ( one):

Male                       Female

Does the karyotype show the presence of a mutation?

Yes                       No

**Diagnosis:** \_\_\_\_\_

PATIENT LETTER/NUMBER \_\_\_\_\_

Total number of chromosomes: \_\_\_\_\_

Total number of autosomes: \_\_\_\_\_

Total number of sex Chromosomes: \_\_\_\_\_

Patient's sex ( one):

Male                       Female

Does the karyotype show the presence of a mutation?

Yes                       No

**Diagnosis:** \_\_\_\_\_

PATIENT LETTER/NUMBER \_\_\_\_\_

Total number of chromosomes: \_\_\_\_\_

Total number of autosomes: \_\_\_\_\_

Total number of sex Chromosomes: \_\_\_\_\_

Patient's sex ( one):

Male                       Female

Does the karyotype show the presence of a mutation?

Yes                       No

**Diagnosis:** \_\_\_\_\_

Analysis questions over karyotypes in general:

1. What 2 types of information can be obtained from a karyotype?
  - a. \_\_\_\_\_
  - b. \_\_\_\_\_
2. How many chromosomes are in a normal human gamete? \_\_\_\_\_
3. How many chromosomes are in a normal human somatic cell? \_\_\_\_\_

4. How do karyotypes for males differ from those of females? \_\_\_\_\_  
 \_\_\_\_\_
5. What is a mutation? \_\_\_\_\_
6. During what cellular processes (think about when sperm and egg are made) could mutations occur resulting in individuals with missing or too many chromosomes? \_\_\_\_\_

SUMMARY PARAGRAPH

WORD BANK

**Gametes**  
**Somatic Cells**

**Gametes**  
**X**

**Mutations**  
**Y**

**Smaller**

A normal human body cell (\_\_\_\_\_) contains 46 chromosomes while a normal sex cell (\_\_\_\_\_) contains 23 chromosomes. Most of the cells in a human contain two copies of each of the 22 different autosomal chromosomes. In addition, there is a pair of chromosomes that determines the sex: a female contains two \_\_\_\_ chromosomes and a male contains one X and one \_\_\_\_ chromosome. The Y chromosome is \_\_\_\_\_ than the X chromosome. The sex chromosome is located in the 23<sup>rd</sup> position on a karyotype.

Changes in DNA are called \_\_\_\_\_. Mutations can occur spontaneously at low rates. Some of these changes make no difference to the organism, whereas others can change cells and organisms. Only mutations in \_\_\_\_\_ can create the variation that changes an organism's offspring.