

KARYOTYPES PROBLEM SET

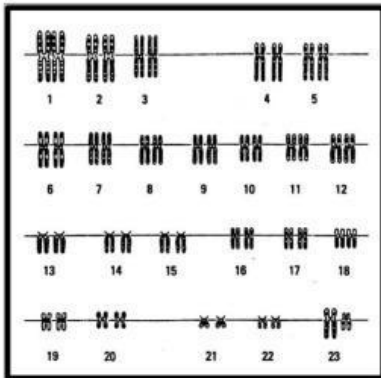
NAME _____

CLASS _____ DATE _____

Long answer

Karyotypes are a special picture of an individual's chromosomes. Humans have 23 different chromosomes. We carry one set that we inherit from our mothers and an additional set which is inherited from our fathers for a total of 46 chromosomes. Sometimes a chromosome is missing (monosomy), or there is an extra copy (trisomy). Occasionally only a portion is missing or translocated. Chromosomal abnormalities result in genetic syndromes.

Here is a diagram of a normal male's karyotype (XY):



A female would be XX.

Notice how there are two copies for each human chromosome? Keep in mind just because a person's karyotype is normal does not mean they will have no health problems. There are many genes embedded in each chromosome which can cause genetic diseases as well.

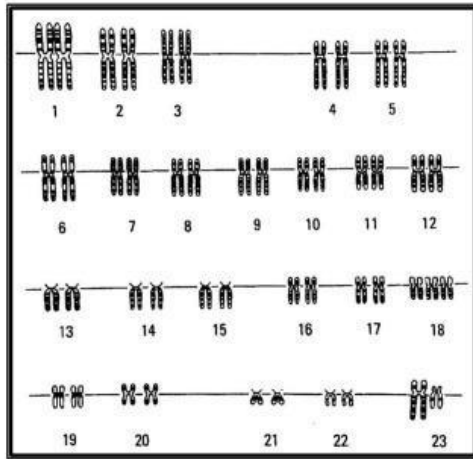
Chromosomes are numbered according to their size. The largest chromosomes coming first followed by the smaller ones. The larger a chromosome is the more genes it has and the more detrimental it is if anything is wrong with said chromosome.

Chromosomes 1 – 22 are known as the autosomes. They code for basic body plans, physical features, habits, talents, different diseases and metabolism. The last pair of chromosomes, number 23 are the sex chromosomes, they influence all the basic traits to be more feminine or masculine.

On the following pages you will see a variety of karyotypes. You need to identify the chromosomal abnormality (monosomy, trisomy, partial deletion or translocation) in each karyotype, identify the sex of the individual and find the name of the disorder.

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1.



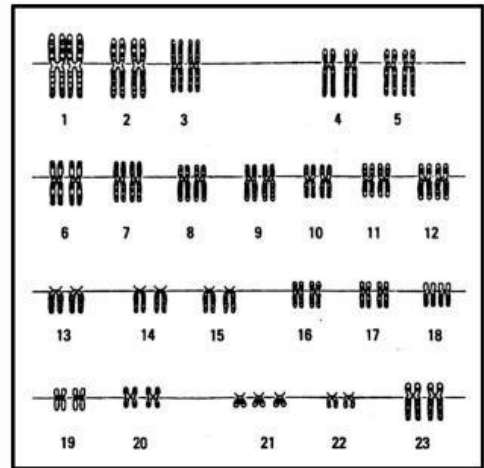
Chromosomal Abnormality

Sex _____ Disorder Name _____

Symptoms _____

Life Expectancy _____

2.



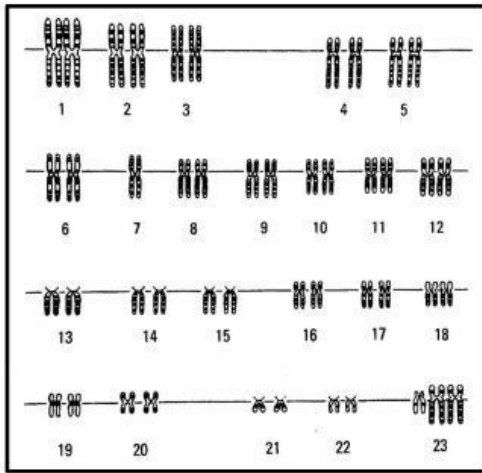
Chromosomal Abnormality

Sex _____ Disorder Name _____

Symptoms _____

Life Expectancy _____

3.



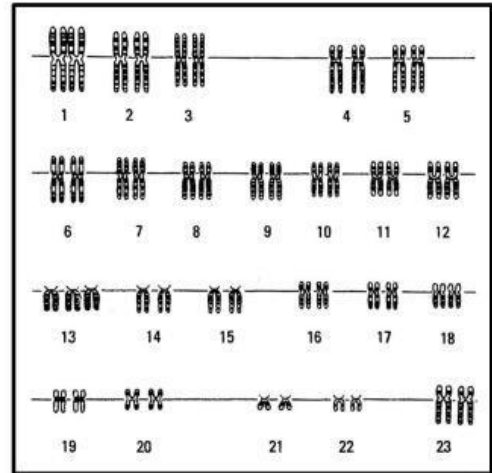
Chromosomal Abnormality

Sex _____ Disorder Name _____

Symptoms _____

Life Expectancy _____

4.



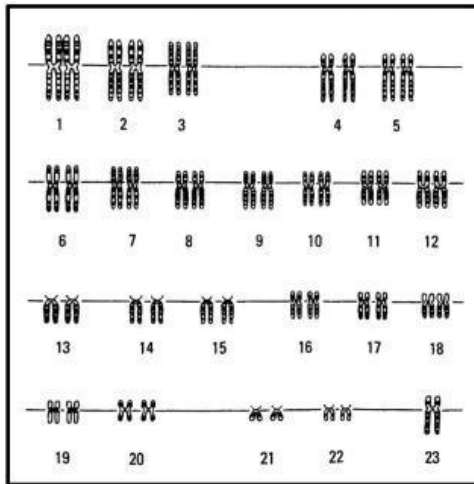
Chromosomal Abnormality

Sex _____ Disorder Name _____

Symptoms _____

Life Expectancy _____

5.



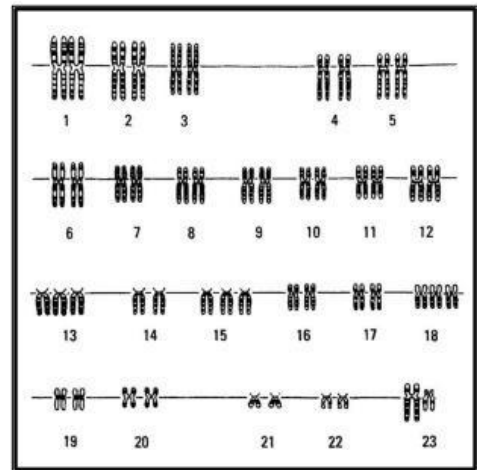
Chromosomal Abnormality

Sex _____ Disorder Name _____

Symptoms _____

Life Expectancy _____

6.



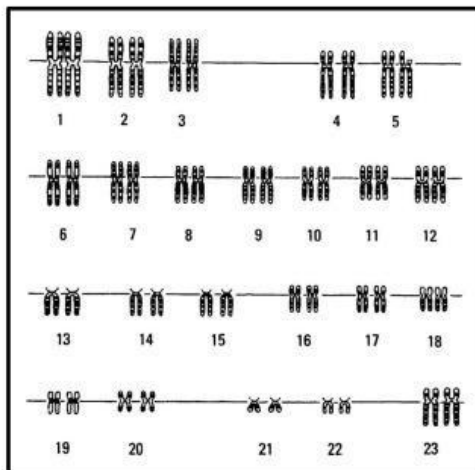
Chromosomal Abnormality

Sex _____ Disorder Name _____

Symptoms _____

Life Expectancy _____

7.



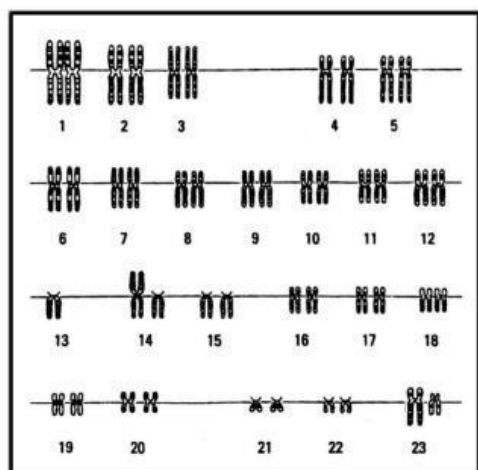
Chromosomal Abnormality

Sex _____ Disorder Name _____

Symptoms _____

Life Expectancy _____

8.



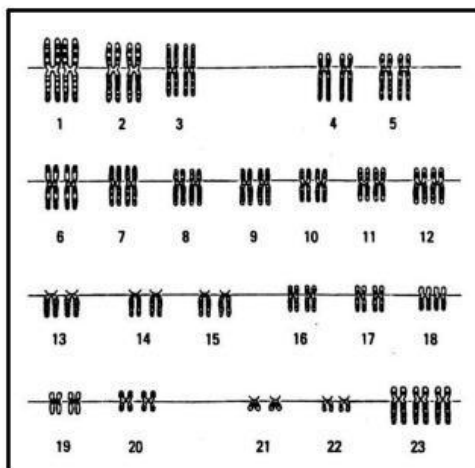
Chromosomal Abnormality

Sex _____ Disorder Name _____

Symptoms _____

Life Expectancy _____

9.



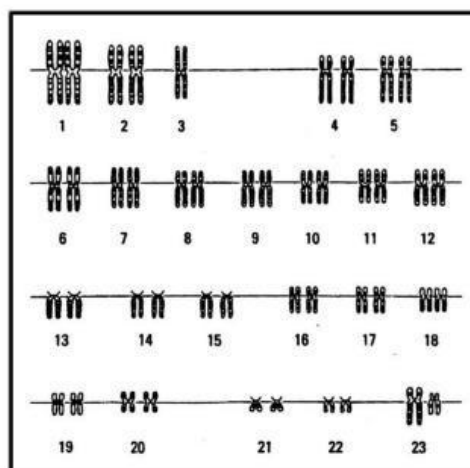
Chromosomal Abnormality

Sex _____ Disorder Name _____

Symptoms _____

Life Expectancy _____

10.



Chromosomal Abnormality

Sex _____ Disorder Name _____

Symptoms _____

Life Expectancy _____