Study Guide

Unit 6

Name:

Period:

**Define**

* Recessive genetic disorder
* Dominant genetic disorder
* Pedigree
* Incomplete dominance
* Codominance
* Multiple alleles
* Epistatsis
* Sex chromosomes
* Autosome
* Sex-linked traits
* Polygenic Trait
* Karyotype
* Telomere
* Nondisjunction
1. **Fill in the table with the missing information.**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Disorder** | **Occurrence** | **Cause** | **Effect** | **Treatment** |
| **Cystic fibrosis** | **1 in 3500** |  | **Excessive mucus production and \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.**  |  |
|  |  | **The lack of the enzyme Hex A which clears fatty protein**  |  | **No cure; death by age 5**  |
| **Galactosemia**  | **1 in 50, 000 to 70,000**  |  | **Kidney failure; mental disabilities**  |  |

1. **Name the cause and of effect of Huntington’s disease.**
2. **T or F. Achondroplasia is a recessive genetic disorder.**

****

**How many people are there in the family?\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**

**How many males are there in the family?\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**

**How many females are there in the family?\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**

**How many generations are there?\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**

**How many people in the whole family have the disease?\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**

**What is the sex of the parent who has the disease?\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**

**How many people are in the F1 generation?\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**

**How many people in the F1 generation have the disease?\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**

**What is the sex of the person in the F1 generation who has the disease?\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**

**How many people are there in the F2 generation?\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**

**How many people in the F2 generation have the disease?\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**

**Create a pedigree based on the following information.**

1) Two parents. Both parents are carriers for the disease.

2) The F1 generation has 6 children – two females are free of the disease, one female is heterozygous for the disease, one male is heterozygous for the disease, one male is homozygous for the disease, and one male is free of the disease, .

3) A male who has the disease marries and mates with one of the unaffected females from the F1 generation. They have four children (two females and two males). One child (female) is homozygous for the disease, one child is a carrier (female), and the other two children are both free of the disease.

4) A female who is free of the disease mates with the male who is free of the disease from the F1 generation. They have three female children who are also free of the disease.

5) One of the daughters from the F2 generation marries a male who is heterozygous for the disease. They have three children: two males and one female. Two of the females are carriers.

**Give an example of incomplete dominance.**

**A red petunia (RR) is crossed with a white petunia (R’R’). Answer the following questions.**

1. **What are the phenotypic and genotypic ratios?**
2. **Why is the genotype for the white petunia R’R’ and not rr?**
3. **What type of complex inheritance pattern is this an example of?**

**Define codominance and provide two examples.**

**What term best describes the inheritance of human blood types?**

1. **Humans have how many pairs of chromosomes?**
2. **Which determine an individual’s gender?**
3. **What is an autosome?**

**Why are males more affected by recessive X-linked traits?**

**Describe red-green color blindness.**

**What is hemophilia?**

**What characteristics are associated with Down’s syndrome?**

**Why are twins used to study the effects of environment on genes?**

**Describe the following nondisjunctions.**

1. **XX**
2. **XO**
3. **XXX**
4. **XY**
5. **XXY**
6. **XYY**
7. **OY**

**Name three different types of fetal tests.**

**What is a karyotype?**

**What is nondisjunction?**

 **What process does nondisjunction occur in?**



 A. Is the baby male or female?

 B. How many chromosomes does your baby have?

 C. How many pairs of chromosomes does your baby have?

 D. Does your baby have any of the disorders mentioned above (Turners, Klinefelters etc) or is your baby normal?