

# HEREDITY Review for Test (chapter 3)

Name \_\_\_\_\_ HR \_\_\_\_\_

The studying of how parents pass their traits to offspring is called \_\_\_\_\_. Genetic information in the parent is located in the \_\_\_\_\_, which is a molecule that looks like a twisted ladder. When DNA is all coiled up into globs it is called a \_\_\_\_\_. There are 46 chromosomes in every human \_\_\_\_\_. If you put all this DNA end to end, it would be six \_\_\_\_\_ long! One of the chromosomes called the \_\_\_\_\_ chromosome, can be either an X or a Y. If your mom and dad both donate an X to you, you will be a \_\_\_\_\_. If your genotype is \_\_\_\_\_, you will be a boy. Since boys only have one copy of the X-chromosome, they sometimes get sex linked \_\_\_\_\_ such as hemophilia, muscular dystrophy, and \_\_\_\_\_. Girls are lucky because if one of the \_\_\_\_\_ is defective, they have a spare. If fathers have one of these disorders, he will never infect his \_\_\_\_\_ children because he only donates his healthy Y-chromosome to them. All of his female children will become \_\_\_\_\_ though.

The man who is considered the father of genetics is \_\_\_\_\_. He studied the \_\_\_\_\_ of peas such as seed color, plant height, and flower location. He determined that there must be an inheritance factor from each parent. Some inheritance factors always show themselves and are called \_\_\_\_\_. Some remain hidden in the first \_\_\_\_\_ but may show up in the second-generation. These genes he called \_\_\_\_\_. If a plant has two alleles that are exactly the same and dominant (TT) it is called \_\_\_\_\_. If one allele is dominant and the other is recessive it is called \_\_\_\_\_. If both alleles are recessive the genotype is \_\_\_\_\_. Sometimes in genetics neither gene is dominant. This occurs in the snapdragon flower. Red flowers mated with white flowers make \_\_\_\_\_ flowers. This situation is called \_\_\_\_\_. Using a \_\_\_\_\_ Square, one can determine the \_\_\_\_\_ of having certain offspring. For example, cross a heterozygous taster ( T-Dominant)with a homozygous recessive non-taster (t- recessive) .

The outcome to the right shows that 50% of the offspring will be homozygous \_\_\_\_\_ and 50% of the offspring will be \_\_\_\_\_. The \_\_\_\_\_ of these offspring are 50% tasters and 50% non-tasters.


In order to understand genetics scientists had to fully understand \_\_\_\_\_, or the splitting of cells. First all the DNA is doubled, then it is coiled up into bundles called \_\_\_\_\_. The chromosomes line up at the \_\_\_\_\_ of the cell and are then pulled apart. Finally the cell \_\_\_\_\_ in half so that there are now two perfect copies of the original. When organisms make sex cells they follow the above steps but then divide the nucleus \_\_\_\_\_ more time. Sex cells then only contain \_\_\_\_\_ chromosomes instead of the usual 46. The 23 chromosomes in the father's \_\_\_\_\_ plus the 23 chromosomes in the mother's \_\_\_\_\_ come out to a perfect 46. This sex cell making process is called \_\_\_\_\_. Some organisms do not require sperm and egg because they go through \_\_\_\_\_ reproduction. There are five ways to reproduce asexually. The first is \_\_\_\_\_ and that means simple cell mitosis. All human body cells reproduce this way. Bacteria and protists do it this way too. Though many plants reproduce sexually, some reproduce asexually by sending out \_\_\_\_\_ underground to make a new plant in a new location. Some plants have specialized leaves that make \_\_\_\_\_, and some plants make round underground roots called \_\_\_\_\_ which can make a clone plant. Another asexual method is called \_\_\_\_\_, a situation where a portion of the parent actually breaks off and then re-grows itself into an entire organism somewhere else. Starfish often do this. Another method involves growing a miniature organism right on the \_\_\_\_\_. It then breaks off the parent and finishes growing somewhere else. This is called \_\_\_\_\_. The main advantage of asexual reproduction is that the \_\_\_\_\_ can grow very rapidly. The disadvantage of asexual reproduction is that all the members of the species are \_\_\_\_\_ which means that if a disease, climate change, or disaster comes on them they will all die because they are genetically pretty much the same.

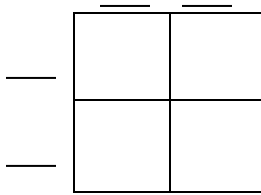
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1. Cross a heterozygous tongue roller with a homozygous recessive non tongue roller

Genotypes

\_\_\_\_\_  
\_\_\_\_\_



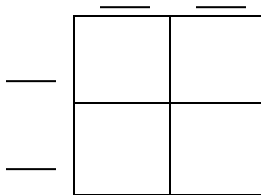
Phenotypes

\_\_\_\_\_  
\_\_\_\_\_

2. What kind of offspring will two homozygous dominant right handed people have?

Genotypes

\_\_\_\_\_  
\_\_\_\_\_



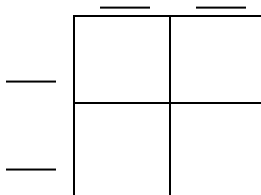
Phenotypes

\_\_\_\_\_  
\_\_\_\_\_

3. If a right handed clasp is recessive, what would the parents have to be in order to make sure that all the children are right handed claspers?

Genotypes

\_\_\_\_\_  
\_\_\_\_\_



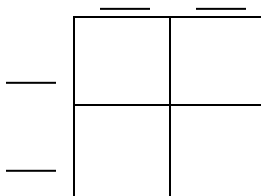
Phenotypes

\_\_\_\_\_  
\_\_\_\_\_

4. What are the results if a tongue roller who is heterozygous mates with another tongue roller who is hybrid for the trait?

Genotypes

\_\_\_\_\_  
\_\_\_\_\_



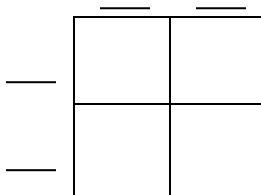
Phenotypes

\_\_\_\_\_  
\_\_\_\_\_

A person with a cleft chin marries someone without a cleft chin. If having a cleft is dominant (C) and the person with the cleft chin is homozygous dominant, how will the children turn out?

Genotypes

\_\_\_\_\_  
\_\_\_\_\_



Phenotypes

\_\_\_\_\_  
\_\_\_\_\_