Mendelian Genetics Quiz

*This quiz will NOT count against your grade! Although this quiz will not count against your grade, it does not mean that you should not complete it to the best of your abilities. This will help me decide which topics we will need to focus on this week. Just breathe, and try to think back to those good old days of middle school science! ☺*

1. What is the difference between Mitosis and Meiosis?

*Mitosis is cell division that all of your body cells go through, where one diploid cell divides to form two identical diploid cells. Meiosis is cell division that occurs in your gametes, where one diploid cell divides to form four genetically different haploid cells.*

2. Compare genotype and phenotype.

*An individual’s* ***genotype*** *is the genetic code they carry in their cells that provides information for a particular trait. Their* ***phenotype*** *is the visible, expressed trait, such as hair color. The phenotype depends upon the genotype but can also be influenced by environmental factors.*

3. Predict the expected genotypic and phenotypic ratios among the offspring of two individuals who are heterozygous for freckles.

|  |  |  |
| --- | --- | --- |
|  | *F* | *f* |
| *F* | *FF* | *Ff* |
| *f* | *Ff* | *ff* |

*Genotypic ratio: 25% Heterozygous dominant, 50% Heterozygous, 25% Homozygous recessive*

*Phenotypic ratio: 75% Freckles, 25% no freckles*

4. What is a genetic disorder? Name an example of a genetic disorder.

*A genetic disorder is a disorder that is caused by genetic abnormalities. (There are many examples but some more common ones include sickle-cell anemia, Huntington’s disease, cystic fibrosis, hemophilia, Down syndrome)*

5. What is a trait? Give an example of a trait.

*A trait is a variation of a particular character. (A trait could be blonde hair, blue eyes, widow’s peak, tall/short, etc.)*