Name: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Unit 7 Topic 1

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**Unit 7 Topic 1 Review**

**Mendel & Basic Dominance**

1. Gregor Mendel is recognized as the Father of Modern Genetics. What type of organism did he study? \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
2. Mendel allowed some plants to self-pollinate and he cross-pollinated others. Explain what these terms mean:
   1. Self-pollinate: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
   2. Cross-pollinate: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
3. Mendel developed three laws within the field of genetics. Describe them below:
   1. Law of \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_: One version of a gene (allele) can completely mask the presence of another.
   2. Law of Segregation: each organism has homologous chromosomes (one set from \_\_\_\_\_\_\_\_\_\_\_, the other from \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_). These separate from one another in gamete production (what process yields gametes? \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_). Half of the gametes will carry one allele and the other half will carry the other allele.
   3. Law of \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_: genes for different traits assort independently of one another in the formation of gametes.
4. Match the following vocabulary terms to their definition:

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| **Term** | **Definition** |
| \_\_\_\_\_ Homozygous | a. A specific version of a particular trait |
| \_\_\_\_\_ Heterozygous | b. Physical expression (what something looks like) |
| \_\_\_\_\_ Allele | c. A form of a trait that is weaker/can be masked by another form |
| \_\_\_\_\_ Heredity | d. The study of heredity |
| \_\_\_\_\_ Genetics | e. A genetic cross that looks at/follows only one gene |
| \_\_\_\_\_ Monohybrid | f. The alleles present for a particular trait |
| \_\_\_\_\_ Dominant | g. A genotype containing two like (of the same) alleles |
| \_\_\_\_\_ Recessive | h. A genotype containing two unlike (different) alleles |
| \_\_\_\_\_ Phenotype | i. The passing of traits from parents to offspring |
| \_\_\_\_\_ Genotype | j. A form of a trait that can overpower/mask a weaker form |

1. Complete the following:

Round watermelon (F) are dominant over long, oval watermelon (f). Cross a pure round watermelon with a heterozygous round watermelon. Provide the following information:

# round offspring: \_\_\_\_\_\_\_\_\_\_ # long/oval offspring: \_\_\_\_\_\_\_\_\_\_\_

% FF: \_\_\_\_\_\_ %Ff: \_\_\_\_\_\_\_ %ff: \_\_\_\_\_\_\_

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Dimpled cheeks are dominant over cheeks without dimples. Cross two heterozygotes and provide the genotypic and phenotypic ratios.

Genotypic Ratio: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Phenotypic Ratio: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_