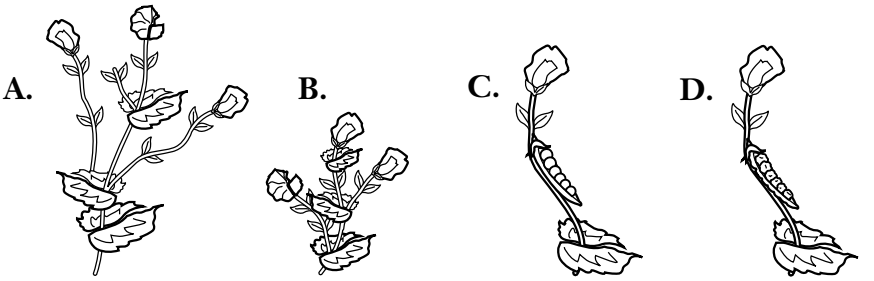
CHAPTER 12 MENDEL AND MEIOSIS

Section 12.1 Mendel's Laws of Heredity

Study the Diagrams

Use the diagram and the paragraph in the box to answer the questions.

Each of these pea plants has a different trait. Each trait is controlled by a pair of alleles that make up a gene for that trait. All genes of an organism make up a genotype. A genotype can be represented by its alleles. Letters such as ***T*** or ***t*** represent different alleles.



1. What are the genotypes of the plants in the diagram? The first one is filled in for you.

a. tall plant _____*TT*_____

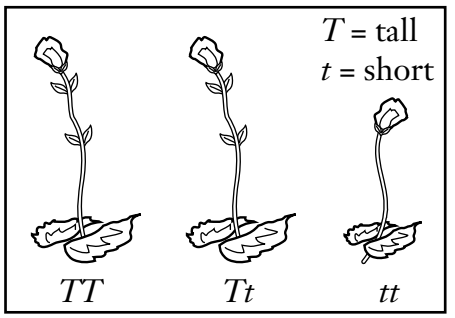
b. short plant _____

c. round pea _____

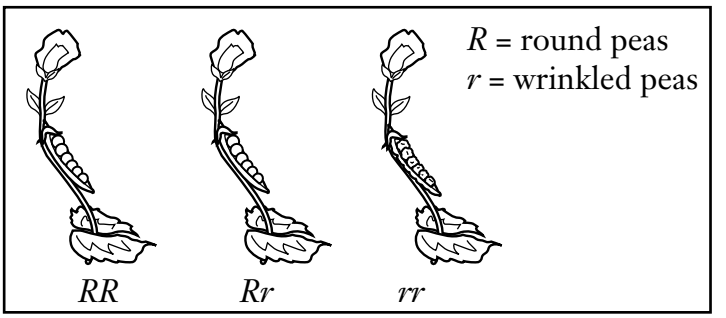
d. wrinkled pea _____

Use the diagrams and paragraph in the box to answer the questions.

A.



B.



The allele for tallness (*T*) makes two of the three plants in diagram A tall. The allele for tallness is a dominant allele. The trait with a dominant allele will show up over a trait with a recessive allele. This means that plants with the dominant allele for tallness will be tall even if they also have a recessive allele for shortness.

2. Will the peas in diagram B that have the genotype *Rr* be round or wrinkled? Explain your answer.

_____

3. In diagram B, what shape will the peas with the genotype *rr* have? Explain your answer.

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