_____ **22.** A relationship between two different numbers that is often expressed as a fraction is a(n)
- **a.** ratio.
- **b.** multiplier.
- **c.** sum.
- **d.** divisor.

_____ **23.** Mendel's results showed that the ratio of dominant traits to recessive traits in second-generation plants is about
- **a.** 4:1.
- **b.** 3:1.
- **c.** 1:4.
- **d.** 1:3.

24. How did Mendel believe his results in calculating the ratio of dominant traits to recessive traits could be explained?

_____

_____

25. If offspring receive two sets of instructions for each characteristic, how are the offspring's traits determined?

_____

_____

26. How long after his results were published in 1865 was Mendel's work widely recognized?

_____

Name _____ Class _____ Date _____

Skills Worksheet

Directed Reading B

Section: Traits and Inheritance (pp. 180–187)

A GREAT IDEA

_____ **1.** One set of instructions for an inherited trait is a(n)
- **a.** allele.
- **b.** phenotype.
- **c.** genotype.
- **d.** gene.

_____ **2.** How many sets of the same gene for every characteristic do offspring receive?
- **a.** one from one parent
- **b.** one from each parent
- **c.** two from one parent
- **d.** two from each parent

_____ **3.** One of the alternative forms of a gene that governs a characteristic is a(n)
- **a.** allele.
- **b.** phenotype.
- **c.** genotype.
- **d.** trait.

_____ **4.** Dominant alleles are shown with
- **a.** capital letters.
- **b.** lowercase letters.
- **c.** boldface letters.
- **d.** italic letters.

_____ **5.** Lowercase letters are used to show
- **a.** dominant alleles.
- **b.** recessive alleles.
- **c.** dominant genes.
- **d.** recessive genes.

_____ **6.** An organism's appearance or other detectable characteristic is its
- **a.** genotype.
- **b.** phenotype.
- **c.** allele.
- **d.** trait.

_____ **7.** The entire genetic makeup of an organism, and the combination of genes for one or more specific traits, is an organism's
a. genotype.
b. phenotype.
c. allele.
d. trait.

_____ **8.** A plant with two dominant or two recessive alleles is said to be
a. homologous.
b. homozygous.
c. heterologous.
d. heterozygous.

_____ **9.** A plant with one dominant and one recessive allele is said to be
a. homologous.
b. homozygous.
c. heterologous.
d. heterozygous.

_____ **10.** For a particular cross, a Punnett square is used to predict
a. possible phenotypes of offspring.
b. possible genotypes of offspring.
c. possible phenotypes of parents.
d. possible genotypes of parents.

The Punnett square below shows a cross between a true-breeding purple flower (*PP*) and a true-breeding white flower (*pp*). Use the Punnett square to answer questions 11 through 13.

	p	***p***
P	*Pp*	*Pp*
P	*Pp*	*Pp*

11. What is the genotype for the offspring of this cross?

12. Why do all offspring from this cross have the same genotype?

13. What color will the flowers of the offspring of this cross be? Explain your answer.

The allele for purple flowers (*P*) is dominant, and the allele for white flowers (*p*) is recessive. The Punnett square below shows a self-pollination cross of a plant with the genotype *Pp*. Use the Punnett square to answer questions 14 through 17.

	P	***p***
P	*PP*	*Pp*
p	*pP*	*pp*

14. According to the Punnett square, what are the four possible genotypes for the offspring of this cross?

_____

15. Of the four possible genotypes for the offspring of the cross shown by the Punnett square, which two are exactly the same?

_____

16. What are the possible phenotypes for the offspring of this cross? Explain your answer.

_____

_____

17. What is the ratio of dominant to recessive traits for the offspring of this cross?

_____

WHAT ARE THE CHANCES?

_____ **18.** The mathematical chance that something will happen is called a(n)
- **a.** ratio.
- **b.** possibility.
- **c.** probability.
- **d.** trait.

_____ **19.** Probability is most often written as a(n)
- **a.** product or percentage.
- **b.** whole number or sum.
- **c.** whole number or equation.
- **d.** fraction or percentage.