

Name _____ Period _____

SECTION 3-2 Probability and Genetics

Complete the two Punnett Squares below, and the answer the questions.

A= black , a = white

1. Punnett Square A:

	A	a
A		
a		

2. Punnett Square B:

	Aa	aa
Aa		
aa		

3. In a cross between two black guinea pigs shown in Punnett Square A, what is the probability (in percent) that the offspring will be black? _____ white? _____

4. Is it possible that the cross between two black guinea pigs in Punnett Square A would **not** produce a white guinea pig? _____ Explain:

5. What color are the guinea pig parents in the cross shown in Punnett Square B?

6. Which guinea pig parent(s) in Punnett Square B is homozygous? _____

Which is heterozygous? _____

7. Calculate the probability that an offspring will be black in the cross in Punnett Square B. _____ What is the probability that the offspring will be white? _____

Match each term with its definition by writing the letter of the correct definition on the line beside the term.

- | | |
|-------------------------|---|
| _____ 8. heterozygous | a. a chart that shows all the possible combinations of alleles that can result from a genetic cross |
| _____ 9. Punnett square | b. the likelihood that a particular event will occur |
| _____ 10. genotype | c. an organism that has two identical alleles for a trait |
| _____ 11. codominance | d. an organism's physical appearance |
| _____ 12. probability | e. an organism's genetic makeup, or allele combinations |
| _____ 13. homozygous | f. an organism that has two different alleles for a trait |
| _____ 14. phenotype | g. inheritance pattern in which the alleles are neither dominant nor recessive |

Name _____ Period _____

SECTION 3-3 The Cell and Inheritance

1. What is mitosis? _____

2. What is meiosis? _____

3. What is the chromosome theory of inheritance? _____

4. Why is it important that sex cells have half the number of chromosomes as body cells?

5. In what type of cell does meiosis occur? _____

6. In what type of cell does mitosis occur? _____

7. How is meiosis different from mitosis? _____
