Name _____ Date _____ Period _____ Score _____

Bikini Bottom Genetics #3

1. For each genotype below, indicate whether it is a heterozygous (He) OR homozygous (Ho).
TT _____ Pp _____ dd _____ Ff _____ Tt _____ FF _____

Which of the genotypes listed above would be considered purebred? _____

2. In Squidward's family, a blue body color (B) is dominant to green (b). Determine the phenotype for each genotype below based on this information.
BB _____ Bb _____ bb _____

3. If tall eyeballs (T) are dominant to short eyeballs(t), give the genotypes that are possible for members of Mr. Krabbs' family.
Tall eyeballs = _____ Short eyeballs = _____

4. SpongeBob is known for his big round eyes (R), which is dominant over an oval eye shape (r). If he is heterozygous for his round eye shape and marries a woman with oval eye shape, what type of eyes might the kids have?

A. List the genotypes for each:
Heterozygous round eyes - _____ Oval eyes - _____

B. Complete a Punnett square to show the possibilities that would result if SpongeBob had children with an oval-eyed woman.

C. List the possible genotypes and phenotypes for their children.

D. What are the chances of a child with a round eye shape? _____%

E. What are the chances of a child with an oval eye shape? _____%

5. Patrick recently married Patti, a cute girl he met at a local dance. He is considered a purebred for his tall head shape (T), which is dominant over a short head (t). If Patti is a short-headed woman, what type of heads would their children have?

A. List the genotypes for each: Patrick - _____ Patti - _____

B. Complete the Punnett square to show the possible offspring.

C. Which type of head is most likely: tall or short? Explain.

D. Would the children be considered purebreds? Explain.

Genetics Challenge

1. The abbreviation for deoxyribonucleic acid is _ _ _
   26

2. A member of a gene pair that determines a specific trait is a(n) _ _ _ _ _ _
   19 25

3. _ _ _ _ _ _ _ is known as the Father of Genetics.
   37

4. A _ _ _ _ _ _ _ _ has genes that are different for a trait, such as Tt.
   38 31 & 53

5. The actual gene makeup of an organism is its _ _ _ _ _ _ _ _
   18 58 48

6. _ _ _ _ _ _ _ are physical characteristics of an organism that are passed down from one generation to the next.
   54 51

7. _ is a condition in which neither of the two genes in a gene pair masks the other.
   13 4 12

8. _ _ _ _ _ _ _ _ _ _ _ _ are rod-shaped structures found in the nucleus of every cell in an organism.
   57 20 46

9. A _ _ _ _ _ _ _ _ trait is expressed when two different genes for the same trait are present.
   6

10. The physical appearance of a trait is called the _ _ _ _ _ _ _ _ _
    14 52 32

11. Mendel experimented with _ _ _ _ _ _ _ _ _ to learn about genetics.
    34 41

12. A _ _ _ _ _ _ _ _ _ _ _ _ gene pair consists of two dominant alleles or two recessive alleles.
    2 56 35

13. According to the _ _ _ of _ _ _ _ _ _ _ _ _ _ _ _ _ _. one gene from each gene pair goes to each sex cell.
    47 50 23

14. The traits of an organism are controlled by its _ _ _ _ _
    15 36

15. A _ _ _ _ _ _ _ _ _ _ _ _ is a chart used to show the possible gene combinations in across between two organisms.
    42 39 21 40

16. A _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ gene pair that consists of a dominant allele and a recessive allele.
    8 3 22

17. The _ _ _ _ _ _ _ _ _ _ _ generation is the offspring of the P, or parental, generation.
    44 45

18. A _ _ _ _ _ _ _ _ _ _ _ _ _ is a scientist who studies heredity.
    29 55 30

19. A _ _ _ _ _ _ _ _ _ _ _ _ trait seems to disappear when two different genes for the same trait are present.
    49 27 5

20. Organisms inherit genes in pairs, one from each _ _ _ _ _ _ _
    43 11 7

21. _ _ _ _ _ _ _ _ _ _ _ is the study of heredity.
    24 9 33

22. The _ _ _ of independent _ _ _ _ _ _ _ _ _ _ _ _ _ _ states that each gene pair is inherited independently of the gene pairs for other traits.
    1 & 17 28 16 10

Use the letters from the terms to complete the joke!

_ _ _   _ _ _   _ _ _   _ _ _ _ _ _ _   _ _ _ _   _ _ _ _ _ _ _ _ _ _?

1 2 3   4 5 6   7 8 9   10 11 12 13 14 15 16   17 18 19 20   21 22 23 24 25 26 27 28 29 30

_ _ _ _ _ _ _   _ _ _   _ _ _ _ _ _   _ _ _ _   _ _   _ _ _ _ _ _!

31 32 33 34 35 36 37   38 39 40   41 42 43 44 45 46   47 48 49 50   51 52   53 54 55 56 57 58