

Genetic Review- CP

Name \_\_\_\_\_  
Date \_\_\_\_\_

Directions: Answer all the questions below.

- Who was Gregor Mendel? \_\_\_\_\_
- What is genetics? \_\_\_\_\_
- What percent does each parent contribute to the offspring? \_\_\_\_\_
- What is used to complete the crosses? (HINT: the boxes) \_\_\_\_\_
- The gametes from the parent go where on the punnett square? \_\_\_\_\_

Top and Side or Inside each box

- Give the term for Bb \_\_\_\_\_
- Define Phenotype \_\_\_\_\_
- \_\_\_\_\_ allele hides a \_\_\_\_\_ allele.
- How many traits are studied in a monohybrid cross? \_\_\_\_\_

10. Do the cross of Aa x Aa  
A = Axial flowers a = terminal flowers

Genotypic ratio: \_\_\_\_\_  
Phenotypic ratio: \_\_\_\_\_

11. Define Incomplete Dominance \_\_\_\_\_

12. Do a cross between a Red (RR) and a White (R'R')


Genotypic ratio: \_\_\_\_\_  
Phenotypic ratio: \_\_\_\_\_

13. Define Co-dominance \_\_\_\_\_

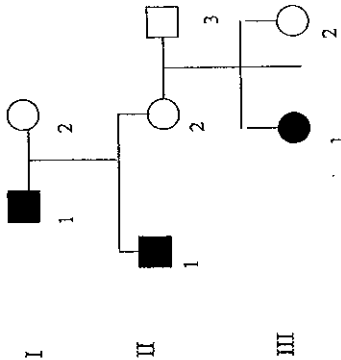
14. Define multiple allele \_\_\_\_\_

15. Do a cross between O (ii) and AB (I<sup>A</sup> I<sup>B</sup>)

Probability of a child with A blood? \_\_\_\_\_


16. What is a pedigree? \_\_\_\_\_

17. Use the pedigree to answer a)-c)



- Is this trait dominant or recessive? \_\_\_\_\_
- Who has the trait? \_\_\_\_\_
- Who is married? \_\_\_\_\_

18. How is sex-linked trait inherited? \_\_\_\_\_

21. Do a cross between a carrier female (X<sup>H</sup>X<sup>h</sup>) and a normal male (X<sup>H</sup>Y)


Who has the trait? \_\_\_\_\_

22. Match the following disease with cause/symptoms

- 1. Turner's Syndrome      a. trisomy 21
- 2. Klinefelter's Syndrome      b. central nervous system recessive
- 3. Tay Sachs' Disease      c. XO
- 4. Sickle Cell Anemia      d. XXY
- 5. Hemophilia      e. bleeding disorder, sex-linked
- 6. Down Syndrome      f. codominant, blood shaped as sickles

23. Blood type is controlled by three alleles  $I^A$   $I^B$   $i$

- a. What are the genotypes possible for a person with A blood? \_\_\_\_\_
- b. What genotype does a person have with AB blood? \_\_\_\_\_
- c. What genotype does a person have with O blood? \_\_\_\_\_
- d. What are the genotypes possible for a person with B blood? \_\_\_\_\_

24. A man who is homozygous B is married to a woman with O blood.

- a. What blood type will all of their children have? \_\_\_\_\_
- b. What is the genotype of the children? \_\_\_\_\_

25. A man with AB blood is married to a woman with O blood. They have two natural children and one adopted child. Jane has type A blood, Bobby has type B blood and Grace has type O blood. Which child was adopted? Use a Punnett square to prove your answer.

26. Use the following key for Colorblindness.  $X^C$   $X^c$  Y

Cross a colorblind man with a woman who is a carrier.

What is the probability that their children will be colorblind? \_\_\_\_\_

27. In cats, the gene for calico (multicolored) cats is co-dominant. Females that receive a B and a R gene have black and orange splotches on white coats. Males can only be black or orange but never calico. Here is the genotype of a calico female.  $X^B X^R$

Show the cross of a female calico cat with a black male.

- a. What percentage of the kittens will be black and male? \_\_\_\_\_
- b. What percentage of the kittens will be calico and male? \_\_\_\_\_
- c. What percentage of the kittens will be calico and female? \_\_\_\_\_

28. In fruit flies, dumpy wings (d) are recessive to normal wings. (D) Cross a homozygous dumpy winged fly with a heterozygous normal fly. Give the phenotypic and genotypic ratios.

29. An alien race called Smileys show co-dominance in their eyes. The Smileys pictured below show the three types of Smileys.



a. If a star-eyed smiley (homozygous) is crossed with a dot-eyed smiley (also homozygous), what will all of their offspring look like? \_\_\_\_\_

b. If two starry-dot Smileys are mated, what will be the phenotypic result? \_\_\_\_\_

c. What is the phenotypic ratio of a cross between a starry-dot Smiley and a dot-eyed Smiley? \_\_\_\_\_