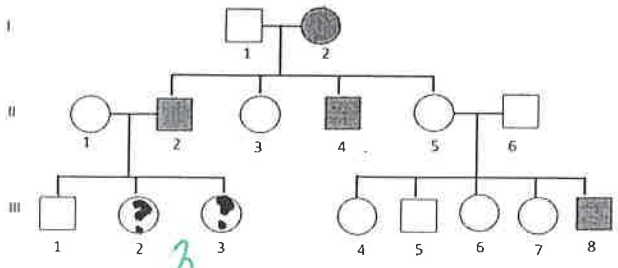
Biology 1 ~ Chapter 7 Study Guide

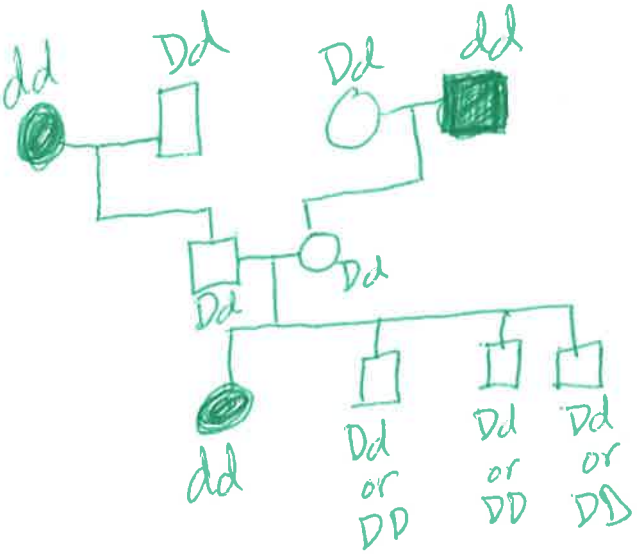
1. What is the difference between autosomes and sex chromosomes? body gene sex gene - determines sex
2. A gene is described as being found on autosomes, what does this mean? it is on a body gene
3. How many copies of chromosomes do sexually reproducing offspring have? 2 copies
4. What are genes located on sex chromosomes called? sex-linked
5. What is a carrier? does not have the disease, but can pass it to offspring
6. Sex chromosomes are 'X' and 'Y'. List the genotype for a male and a female. male - XY female - XX
7. From who does a male inherit his X chromosome? mother
8. In males, why are alleles found on the sex chromosome always expressed? there is no second X to mask it
9. Describe incomplete dominance and give an example. mixture, heterozygous is in between
10. Describe codominance and give an example. spotted, both show up
11. Describe polygenic traits and given an example. many genes are responsible for the trait
12. What is a chart that traces the phenotypes and genotypes within a family called? pedigree
13. What information can one obtain from a karyotype? chromosome number or big changes
14. How many pairs of chromosomes do human body cells have? 23 pair
15. What has the ability to change the way a gene is expressed? the environment
16. What is the difference between a phenotype and genotype? phenotype - what it looks like
17. What is epistasis? masks other genes, usually causes albinism genotype - what the alleles are
18. What method would best identify the genetic disorder Down Syndrome, having an extra copy of chromosome 21? Karyotype
19. Suppose 2 plants with light purple (lavender) flowers are crossed. About 25% of the offspring have white flowers, 25% have purple, and 50% have lavender flowers. Which inheritance pattern could explain these results? Explain. both parents are heterozygous (incomplete dominance)
20. Some members of David's family have an autosomal recessive disease. David does not have the disease; neither do his parents, nor his two brothers. His maternal grandfather has the disease, his paternal grandmother has the disease, and his sister has the disease. Draw a pedigree chart to represent the genotypes of all grandparents, parents, and children. Next to each person, write his or her possible genotype.
21. Duchenne's muscular dystrophy is x-linked recessive. If a normal female (non-carrier) and affected male have children, what % of their male offspring would be expected to have Duchenne's muscular dystrophy? Zero %
22. Straight hair is incompletely dominant over curly hair and "wavy" hair is the intermediate phenotype. What would be the expected genotypic ratios in a cross between a female with wavy hair and a male with curly hair?
23. What are all the possible blood types when a man with type A blood and woman type O blood have children? A or O
24. When a codominant inheritance pattern is observed in cows, three phenotypes result- black, white, and black & white spotted. What offspring would you expect from mating a black cow and a black & white spotted cow? All black
25. A man with hemophilia has children with a woman who is a carrier. Knowing that this is an x-linked trait, what percentage of their male children will have the disorder? 50%



Affected female affected male
Normal female normal male
Carrier female

26. How many generations are shown? 3 How many affected individuals are there? 4
What is the most probable mode of inheritance? Autosomal dominant / recessive
What is the phenotype for individuals 2 & 3 from generation III?
Normal females

20.



25.

	X^h	Y
X^H	X^HX^h	X^HY
X^h	X^hX^h	X^hY

50% of females

50% of males