Mendel – Monohybrid cross

Read Chapter 6.1-6.2

Fill in the blanks

1. The transfer of traits from parents to offspring is called _____.
2. Humans have _____ chromosomes and approximately _____ genes.
3. _____ are almost exactly the same and come from each parent.
4. _____ are exactly the same and come from DNA replication.
5. Match the correct word to each definition.

Dominant, Recessive, Phenotype, Genotype, Homozygous, Heterozygous, Allele

   A) A variation of a gene sequence on each homologous chromosome _____
   B) When 2 alleles are the same _____
   C) When 2 alleles are different _____
   D) Both alleles are required to show the trait _____
   E) Only 1 allele will show the trait _____
   F) The gene combination that produces the trait _____
   G) The outward appearance of an organism _____

6. Suppose the letter p is used to indicate pea flower colour, and purple is dominant over white. The genotype of a purple flower could be _____ or _____ and the genotype of a white flower would be _____.
7. If a pea plant flower genotype is Pp, then the phenotype is _____.
8. Suppose the letter c is used to indicate an allele for Cystic Fibrosis, the genotype of a heterozygous individual is _____
9. If Cystic Fibrosis is a recessive disease then that means an individual must have _____ genotype to have the disease.
10. Using a Punnett square, what is the probability that two heterozygous purple parent pea plants will have white offspring? _____%
11. If you flip a coin one time, the probability that you will get a head is _____%.
12. If you flip a coin two times, the probability that you will get 2 heads in a row is _____%
13. If you cross 2 pea plants that are heterozygous for flower colour, what is the ratio of purple to white offspring? _____

14. If you cross a homozygous purple flower with a homozygous white flower, the genotype of all of the offspring will be _____
15. If you cross a homozygous purple flower with a homozygous white flower, the phenotype of all of the offspring will be _____
16. If round seeds are dominant over wrinkled seeds, can two round-seed parents have any wrinkled offspring (yes or no)? _____
17. Let's suppose you have 2 parent pea plants. One pea plant is homozygous dominant for yellow seeds and the other pea plant is heterozygous for yellow seeds. (Use capital **Y** for the dominant trait and a small **y** for the recessive trait)
    A) What is the genotype of the homozygous dominant pea plant? _____
    B) What is the phenotype of the homozygous dominant pea plant? _____
    C) What is the genotype of the heterozygous pea plant? _____
    D) What is the phenotype of the heterozygous pea plant? _____
    E) What possible gametes can the homozygous pea plant produce? _____
    F) What possible gametes can the heterozygous pea plant produce? _____