

43. Define **gene** _____
44. What causes diseases that are inherited _____.
45. An organism's _____ is the set of genes that it carries.
46. About how many genes do humans have? _____
47. How many **different** chromosomes do humans have? ____ How many of each? _____
48. How many **total** chromosomes do humans have? _____
49. What type of gene is always expressed? _____
50. What type of gene is only expressed some of the time? _____
51. **Homo** is a prefix meaning _____
52. **Hetero** is a prefix meaning _____
53. Define **homozygous** - having two of the _____ alleles of a particular gene or genes.
54. Define **heterozygous** - having two _____ alleles of a particular gene or genes.
55. Circle the following genotype(s) that are **homozygous**: **GG** **Gg** **gg**
56. Circle the following genotype(s) that are **heterozygous**: **GG** **Gg** **gg**
57. Freckles (F) are dominant to not having freckles (f). The diagram shows the cross of a homozygous dominant parent (FF) with a parent of an unknown genotype for freckles.

	F	F
?	Ff	Ff
?	Ff	Ff

What is the unknown genotype and phenotype for the parent?

- homozygous dominant with freckles
- homozygous recessive without freckles
- heterozygous with freckles
- heterozygous without freckles

58. **True or False** A trait can be determined by one gene, many genes, and/or the environment.
59. **True or False** Sexual reproduction of both plants and animals requires fertilization.
60. **True or False** Sexual reproduction occurs in both plants and animals.
61. Fission produces an exact copy of the original worm by copying the DNA and splitting the worm in two. What type of reproduction is this? _____
62. **True or False** The transfer of genes to offspring is a characteristic of BOTH sexual and asexual reproduction.
63. During asexual reproduction genetic material comes from _____ parent(s).
64. During sexual reproduction genetic material comes from _____ parent(s).
65. If both parents each have one copy of a gene for a recessive genetic trait what would their genotypes be? _____, _____.
66. Draw a Punnett Square using the genotypes of the parents from question 65.
67. Based on the information in the Punnett Square from question 66, what percent chance will the offspring have of inheriting the recessive trait? _____
68. Based on the information in the Punnett Square from question 66, among the offspring, what is the ratio of dominant to recessive for this trait? _____
69. A Punnett Square helps determine the probability of traits in offspring as a result of _____ reproduction.

70. Why would the offspring resulting from fertilization have more differences than the offspring resulting from budding?