

Warm-Up: Mendel and Meiosis

Examine the table. Then answer the questions.

Chromosome Numbers of Some Common Organisms

Organism	Body Cell ($2n$)	Gamete (n)
Human	46	23
Garden pea	14	7
Fruit fly	8	4
Tomato	24	12
Dog	78	39
Chimpanzee	48	24
Leopard frog	26	13
Corn	20	10

1. What is the diploid number of chromosomes in corn?

2. What is the haploid number of chromosomes in corn?

3. Is the chromosome number related to the complexity of the organism?

4. How many pairs of chromosomes do humans have?

5. What process maintains a constant number of chromosomes within a species?

Scientists at Bikini Bottoms have been investigating the genetic makeup of the organisms in this community. Use the information provided and your knowledge of genetics to answer each question.

1. For each genotype below, indicate whether it is a heterozygous (He) OR homozygous (Ho).

TT _____ Bb _____ DD _____ Ff _____ tt _____ dd _____

Dd _____ ff _____ Tt _____ bb _____ BB _____ FF _____

Which of the genotypes in #1 would be considered purebred? _____

Which of the genotypes in #1 would be hybrids? _____

2. Determine the phenotype for each genotype using the information provided about SpongeBob.

Yellow body color is dominant to blue.

YY _____ Yy _____ yy _____

Square shape is dominant to round.

SS _____ Ss _____ ss _____



3. For each phenotype, give the genotypes that are possible for Patrick.



A tall head (T) is dominant to short (t).

Tall = _____ Short = _____

Pink body color (P) is dominant to yellow (p).

Pink body = _____ Yellow body = _____