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Homologous Chromosomes Practice

Name: _____

Background: Diploid/somatic cells always have an even number of chromosomes because they exist in pairs ($2n$). Haploid/sex cells contain only half the number of chromosomes (n). An example of haploid cells is sperm found in male species and eggs found in female species. One unique set of chromosomes are found in the father's sperm (n) and one unique complementary set is found in the mother's egg (n). When the sperm fertilizes the egg, it becomes a diploid cell ($n + n = 2n$).

EXAMPLE: In our somatic cells are 23 pairs of chromosomes or $2n=46$. In our sex cells, we have 23 unique chromosomes or $n=23$.

Complete the following table of chromosome numbers in various species. Notice that the number of homologous chromosomes is the same as the number of chromosomes found in a haploid cell.

Species	Number of chromosomes in diploid cells ($2n$)	Number of homologous chromosome pairs in diploid cells	Number of chromosomes in haploid cells (n)
Homo sapiens	$2n=46$	23	23
Fruit fly	$2n=8$	4	4
Leopard frog	$2n=26$	13	13
Housefly	$2n=12$	6	6
Monkey	$2n=42$	21	21
Bat	$2n=44$	22	22
Chicken	78	39	39
King Crab	$2n=208$	104	104
Camel	$2n=70$	35	35
Goat	60	30	30
Armadillo	$2n=64$	32	32

1. How many chromosomes are in chicken haploid cells?

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2. How many *pairs* of chromosomes do camels have in their somatic cells?

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3. How many chromosomes are in a King Crab sex cells?

104

4. How many chromosomes are in the gametes of Armadillo?

32

5. How many chromosomes do horses have in their somatic cells?

64

6. The monkey has 42 chromosomes in its diploid cell. How many chromosomes are in the haploid cells?

21

7. What is a karyotype?

It is a way to see what a person's sex is or if they have

8. Give two facts about the following person. any disorders

It is a male

They don't have any disorders

