Name:\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_#:\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

**INTERPRETING ECOLOGICAL DATA**

**Graph 1: Rabbits Over Time**



a. The graph shows a \_\_\_\_\_\_\_\_\_\_ growth curve.
b. The carrying capacity for rabbits is \_\_\_\_\_\_
c. During which month were the rabbits in exponential growth?

**Graph 2: Average Toe Length**



a. In 1800, about how many people surveyed had a 3 cm toe? \_\_\_\_\_\_
How many in 2000? \_\_\_\_\_\_\_
b. The data shows the \_\_\_\_\_\_\_\_\_\_\_\_ selection has occurred?
c. In 2000, what is the average toe length? \_\_\_\_\_\_ What is the average toe length in 1800 \_\_\_\_\_\_\_

**Graph 3: Mexico and US**



a. In Mexico, what percentage of the population is between 0-4 years of age? \_\_\_\_\_\_\_ In the US? \_\_\_\_\_\_
b. Which population is growing the fastest? \_\_\_\_\_\_\_\_
c. Which age group has the smallest number in both countries? \_\_\_\_\_

**Chart 4: Trapping Geese**

In order to estimate the population of geese in Northern Wisconsin, ecologists marked 10 geese and then released them back into the population. Over a 6 year period, geese were trapped and their numbers recorded.

|  |  |  |
| --- | --- | --- |
| Year | Geese Trapped | Number with Mark |
| 1980 | 10 | 1 |
| 1981 | 15 | 1 |
| 1982 | 12 | 1 |
| 1983 | 8 | 0 |
| 1984 | 5 | 2 |
| 1985 | 10 | 1 |



a. Use the formula to calculate the estimated number of geese in the area studied? \_\_\_\_\_\_\_\_\_\_\_\_\_
b. This technique is called \_\_\_\_\_\_\_\_\_\_\_\_ & \_\_\_\_\_\_\_\_\_\_\_\_\_\_
c. Suppose more of the geese found in the trap had the mark, would the estimated number of geese in the area be greater or lesser? \_\_\_\_\_

**Chart 5: Mushroom Plots**

Another ecologist uses a different method to estimate the number of mushrooms in a forest. She plots a 10x10 area and randomly chooses 5 spots, where she counts the number of mushrooms in the plots and records them on the grid.

****

1. Calculate the number of mushrooms in the forest based on the grid data: \_\_\_\_\_\_\_\_\_
2. This technique is called \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

**Chart 6: Snakes & Mice**

|  |  |  |  |
| --- | --- | --- | --- |
| Year | Snakes | Mice born | Mice died |
| 1960 | 2 | 1000 | 200 |
| 1970 | 10 | 800 | 300 |
| 1980 | 30 | 400 | 500 |
| 1990 | 15 | 600 | 550 |
| 2000 | 14 | 620 | 600 |
| 2001 | 15 | 640 | 580 |

The data shows populations of snake and mice found in an experimental field.

a. During which year was the mouse population at zero population growth? \_\_\_\_\_\_
b. What is the carrying capacity for snakes ? \_\_\_\_\_\_
c. What is the carrying capacity for mice? \_\_\_\_\_
d. What is the rate of growth (r) for mice during 1970? \_\_\_\_\_ During 1980? \_\_\_\_\_\_