



Problem 1 – Estimating and Gathering Data

1. Estimate the total population in the jar.

Write your estimate. _____

2. How did you arrive at your estimate? _____

3. Count your sample. Total: _____ Tagged: _____

4. What is the ratio of the number tagged in your sample to the total sample?

5. Record the data of the entire class. Total: _____ Tagged: _____

6. What is the ratio of classes' tagged samples to the total sample population?

7. How did your ratio compare to the class ratio?

Problem 2 – Finding the Whole Population

8. What is the total number of tagged beans? (given by teacher) _____

9. Write a proportion using the class tagged ratio to solve for the total population.

10. What is the total population? _____

11. How close was your original estimation to the actual population? _____



Problem 3 – Counting Parts of Populations

You are participating in a volunteer group to count deer in your area. The leader of the project tells you that the ratio of tagged deer to the population should be $\frac{12}{80}$.

12. One Saturday, you observe 3 tagged deer. How many deer likely live in the general area?

Use the **Constant** feature. Press `2nd` `CONST`, `1` `2` `b/c` `8` `0`. Go back to the home screen, `2nd` `MODE`. Enter the number you observed, `3`, `÷` `CONST` `ENTER`.

Write the answer. _____

13. Another group observes 7 tagged deer. How many likely live in that area?

Write the answer. _____

In another project, they do not know the total population of bass in a national park lake. However, they have obtained the following data from samples.

14. If they have average observed a sample ratio of $\frac{15}{83}$. If they know 122 tagged fish were released, what is the current total population in the lake? _____