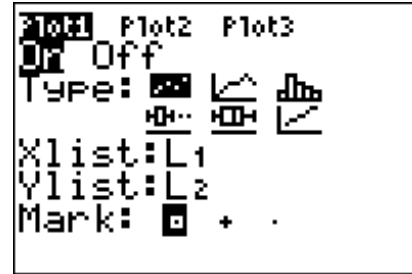# Dog Days or Dog Years?

Name _____

Class _____

Problem 1 – Ordered Pairs

Run the program **CONVERT**. Select option **1:SPOT**. This program converts Spot the dog's age from dog years to human years.

1. Describe the ordered pair in words for Spot's age conversion. Which is the independent variable? The dependent variable?

2. Enter various ages for Spot. List 5 numerical pairs.

Claim: Each dog year is equal to 7 human years.

3. List 5 ordered pairs for the claim? What would be the function?

4. How do the two sets of ordered pairs compare? Does Spot's age support the claim? Explain your reasoning.

Problem 2 – Table of values and Scatter plot

Select option **2:TABLE**. This creates two lists L_1 and L_2, representing Spot's age and his equivalent human age, respectively. Press STAT ENTER to see the lists.

Then set up the scatter plot, by pressing 2nd [STAT PLOT] and match the settings at the right. Press ZOOM and select **ZoomStat** to see the plot.
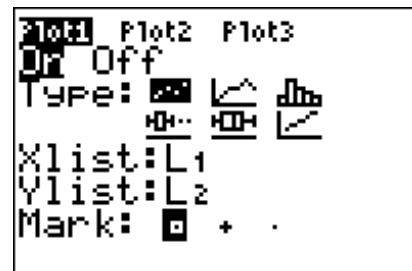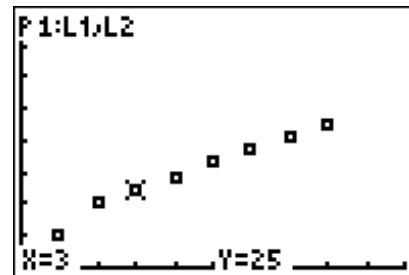
5. At what dog age does the relationship to human years change? How did you determine this?

6. Using the lists, determine by how much the human age increases for every dog year for the first part and for the second part of the scatter plot.

7. Now use the lists to determine a function for the first part and a function for the second part.

Press Y= and enter your functions. Then press GRAPH to view your functions with the scatter plot. Do your functions go through all of the points?

```
P1:L1,L2

                              □
                          □
                      □
                  □
              □  □
          □
    □
X=3          Y=25
```

8. Use the graph to predict the human age of a dog that is 10 years old. Use TRACE to move right and left on the function.

9. What is the domain and range for Spot's age?

10. Based on the ordered pairs, table, and scatter plot, a dog is always 7 years old for every 1 year of human age.

        ☐ True   ☐ False

Extension/Homework

Select option **3:FIFI** of the program. This program converts Fifi the cat's age from cat years to human years. Produce the same type of data for cats as you did above for dogs. (lists, scatter plot, Y= equations to model function) Plot enough points so that you can look for patterns and perhaps write an equation or even a piecewise function for it. Make some predictions for cats' ages that you did not calculate.

Write a sentence or two to describe the similarities or differences between the cats' ages and dogs' ages. Your analysis could convince someone to give up that 7 year myth—be a Mythbuster!