**In Class Assignment using the graphing calculators** Name: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

*Learning Goals: By the end of class today I will be able to...*

* Enter and use data in the graphing calculator
* create a scatter plot using the graphing calculator
* Determine the equation of the line of best fit and place it on the graph using the G.C.
* Determine the correlation coefficient and describe what it means

1. Clear the memory on the graphing calculator

2. Enter the data from page 159 using the graphing calculator

3. Turn on the stat plot (for list 1 and list 2)

4. Set your window or Zoom 9 using the data from list 1 and list 2

5. What does the plot suggest about how the number of smog advisories is changing over time?

6. Describe any correlation between the variables

7. Do you think it would be appropriate to model the relationship with a line of best fit? Justify your answer.

8. Look in the blue box on p. 161 and write the definition of the correlation coefficient here:

9. Determine the equation of the line of best fit and the correlation coefficient (follow instructions on your graphing calculator instruction sheet). Write them below:

 Equation of the line of best fit:

 correlation coefficient: (r-value)

10. What is the slope of the line?

11. Describe the line of best fit. Is it what you expected? (refer to your answer from #6). Explain why or why not.

12. Using the trace button on the calculator determine wat was the predicted number of smog advisories for 2007. Write it here:

13. As of October 22, 2007, there were 13 smog advisories in Ontario. Is the total number for the year likely to be much greater than this? Explain.

14. Was the prediction from the line of best fit close to the actual number?

15. Change the window on the G. C. to include the year 2010. Then use the trace button to determine the y-value at that time. What is it?

16. Which point appears to be an outlier?

17. The summer of 2005 was one of the hottest and most humid summers in Ontario. Toronto recorded 41 days with temperatures greater than 30°C. How might this have resulted in the unusual data for 2005?

**REMOVING AN OUTLIER**

18. Press stat 1 to access the lists you have stored. In L1, use the down arrow key to move to the entry for 2005. Pres DEL and then move to the right and press DEL again to delete the corresponding entry in L2. Pres the arrow to move right and press DEL again to remove the corresponding entries in L3.

19. Repeat the process for creating a line of best fit.

 What is the new equation of the line?(round a to one decimal place and b to the nearest whole number)

 What is the new correlation coefficient, r?

 How does the correlation coefficient compare to the coefficient from question 9 above?

 What does this suggest about the new model?

20. What is the new predicted number of smog advisories for 2007 and 2010? (use the trace button.)

21. Which line of best fit gave a more accurate prediction for 2007?

22. Would you say that including outliers always weakens a model? Justify your answer.