Going For The Gold!

Class _____

Problem 1 – Men's 100 Meter Dash

In this activity, you'll find the line of best fit for two sets of data.

1. Create a scatter plot of the Men's 100m dash data for the given years.

After the lists are loaded, press [2nd] [Y=] and select **Plot1**. Set the plot up to be a scatter plot ( ) with **L1** for the Xlist and **L2** for the Ylist. Then press [ZOOM] and choose **7:ZoomStat**.

Sketch your graph at the right. Make sure to put a scale on the graph.

2. What is the general trend in the data? _____

_____

3. Draw a manual line of best fit. Press [2nd] [LIST] [◄] and choose **Manual Fit** from the CALC menu. Press [ENTER] on the Home screen. When on graph screen, press [ENTER] to place the first point of the line. Move the cursor to draw the line out and press [ENTER] when your line is satisfactory. You can use [▼] and [▲] to change the slope of the line and [◄] and [►] to change the *y*-intercept.

Write the line of best fit you determine. _____

4. Sketch the line on your graph in Question 1.

5. Using the line of best fit, what would you predict the time might be:

In 8 more years? _____

In 12 more years? _____

6. Do you think the line can predict the time indefinitely? Why or why not? _____

_____

_____

Problem 2 – Women's 100 Meter Dash

7. Create a scatter plot of the Womens' 100m dash data for the given years. Choose **L3** for the Xlist and **L4** for the Ylist.

Sketch your graph at the right. Make sure to put a scale on the graph.

8. What is the general trend in the data? _____

_____

9. How does this compare to the men's data? _____

_____

10. Draw a manual line of best fit for this second set of data.

Write the line of best fit you determine. _____

11. Sketch the line on your graph in Question 7.

12. Using the line of best fit, what would you predict the time might be:

In 4 more years? _____

In 8 more years? _____

13. Do you think the women's time will ever be less than the men's time? Explain why or why not. _____

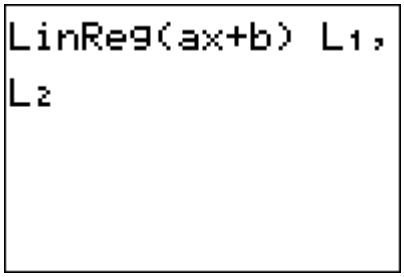
_____

_____

Problem 3 – Manual Fit vs. LinReg

Let's compare the best fit line you found to the best fit line the calculator will find.

14. Use the **LinReg(ax+b)** command to find a line of best fit for the Men's data. From a clear home screen, press [2nd] [LIST] and choose **LinReg** from the CALC menu. Then press [2nd] [LIST] [1] [,] [2nd] [2] and then [ENTER] to execute the command.



What does the calculator calculate as the line of best fit? _____

15. How does this compare to the equation you found in Question 3?

_____

16. Calculate the **LinReg** for the Women's data. _____

17. How does this compare to the equation you found in Question 10? _____

_____

18. What do you think causes the differences in your manual-fit line and the line the calculator find?

_____

_____