

KEY

LINE OF BEST FIT AND LINEAR REGRESSION

A. LINE OF BEST FIT: What are two conditions to satisfy when finding your line of best fit?

1. \_\_\_\_\_

2. \_\_\_\_\_

B. On the "800 Meter Race" handout, draw a line of best fit for the men's data. Then manually find the equation of this line. Show work below. When you have computed your equation, share and compare your equations with each other. Decide which equation is the closest representation of the men's data and write this equation on the board.

C. **Linear regression** is finding the line of best fit by using a graphing calculator. Enter the men's data into your graphing calculator and follow the steps on the separate sheet to find the linear regression equation. Write down the equation. Compare this equation to the equation you found in part B above. How close are the two equations?

$$y = 0.1488x + 114.3993333$$

D. On the "800 Meter Race" handout, draw a line of best fit for the women's data. Then manually find the equation of this line. Show work below. When you have computed your equation, share and compare your equations with each other.

E. **Linear Regression:** Enter the women's data into your graphing calculator and follow the steps to finding the linear regression equation. Write down the equation. Compare this equation to the equation you found in part D above. How close are the two equations?

$$y = -0.508214...x + 154.4375$$