1. To find the mean of each data set:
   1. In cell B81 type the following formula “ =average(
      1. After you open the parenthesis, highlight the column of data above that cell. Only the raw data numbers, not the “resting” heading.
      2. Once it is highlighted close the parenthesis and hit enter. The total formula will look like this: =average(B2:B80)
      3. Copy this cell (Control C or right click) and paste next to it under the second set of data. (This automatically will find the mean for the second set)
2. To find the standard deviation of each data set:
   1. In cell B82 type the following formula “ =stdev(
      1. After you open the parenthesis, highlight the column of data above that cell. Only the raw data numbers, not the “resting” heading, and not the mean you just figured out.
      2. Once it is highlighted close the parenthesis and hit enter. The total formula will look like this: =stdev(B2:B80)
      3. Copy this cell (Control C or right click) and paste next to it under the second set of data. (This automatically will find the standard deviation for the second set)
3. To find the Standard Error of each data set:
   1. To find standard Error, you will use the following formula “ =standard deviation/(square root(number of data points))” in cell B83
      1. After you type the “=”, highlight the cell where you figured out the standard deviation
      2. Once it is highlighted enter the “/”
      3. You then need to open parenthesis and type “sqrt” and open another set of parenthesis
      4. Then enter the number of individual pieces of data you have and close both parenthesis. The total formula should look like this: =B82/(sqrt(11))
4. To create a bar graph:
   1. First copy and paste the resting and exercising headings to a new area in the spreadsheet.
   2. Then copy and paste the values for the means only under the appropriate column. (If you just hit paste you will get the following: “#REF!” You must click on the clipboard for more paste options and choose values only)
   3. Once this is finished, highlight all four cells and choose the “insert” tab at the top of the sheet.
   4. Click on column and pick the first 2D column choice
   5. Click on chart layout, and pick a layout that contains a title, key and axis labels (Layout #9 is good)
5. To add the appropriate error bars to your graph:
   1. First right click on the middle of your graph and choose “select data”
   2. Then “switch rows/columns”
   3. Then click to highlight your first bar
   4. Go to the top of the sheet where it says chart tools, and click on “Layout”.
   5. Look to the right and click on “Error Bars”
   6. Scroll to the bottom for “More Error Bar options”
   7. Choose “custom” and “specify value”
   8. Click on the blue graph next to the positive error value.
   9. Find where you calculated Standard Error for your first data set and click on that cell to highlight it.
   10. Next click on the blue graph next to the negative error value and use the same standard error number for the negative value.
   11. Close the window, hit OK and close out. You will now notice your first graph has an error bar.
   12. Click to highlight your second bar and repeat the procedure for the second data set.
6. Now you are ready to make your graph pretty
   1. Be sure to give your graph an appropriate title
   2. Label the axis with the value AND the label for the value
   3. Hint: for this particular graph you will not need the x-axis labeled b/c we have a key, so you can delete those numbers under the x-axis.
   4. You may drag the corner of your graph to make it larger if you would like
7. Save all of your work
8. Open a Microsoft Word document
   1. Insert a text box and draw it to about the size of your graph.
   2. Go back to Excel and copy your graph and then paste it into your Microsoft Word text box.
   3. Draw another text box UNDER your graph to enter your caption.
   4. For both text boxes, right click on the border line around the box, choose format text box and make the border line disappear.
9. Save your Microsoft Word document to your H drive
10. Email both the Word Document AND the Excel Spreadsheet to yourself so you have a back-up copy of your work.