Your Name: _____

Names of people you worked with: _____

**Instructions**: Work on this problem in class with your group (if you are attending class synchronously) or out of class (hopefully with a person or two! if you are attending class asynchronously). The problem should be done on a piece of paper with a pencil or on some kind of tablet. The problem should **not** by typed up or done in LaTeX.

If working asynchronously: work for a *maximum* of 15 minutes on the problem (regardless of what time you are working). *Do not* come back to the problem to "fix it up" or "finish it." Be sure to write down the names of the people you worked with during class (or outside of class).

Take a picture of your work and use a scanning app to create a pdf (or create a pdf directly from your tablet). Upload your work to Gradescope (via Sakai) within 24 hours of class.

**Task**: Use the following link to get to the regression applet: `http://www.rossmanchance.com/applets/2021/regshuffle/regshuffle.htm`

1. Click on "show movable line"

2. Click on "show residuals"

   (a) Move the line around until you get SAE (sum of absolute errors) as small as possible.
   (b) Write down the value you got for SAE.
   (c) Write down the line you got which minimized the SAE.

3. Unclick "show residuals" and click on "show squared residuals"

   (a) Move the line around until you get SSE (sum of squared errors) as small as possible.
   (b) Write down the value you got for SSE.
   (c) Write down the line you got which minimized the SSE.

4. Were the SAE and SSE lines the same? Should they be?

**Solution:**

1. done

2. done

3. (a) done
   (b) SAE = 51.00
   (c) height-hat = 42.95 + 0.86*footlength

4. (a) done
   (b) SSE = 235.19
   (c) height-hat = 38.49 + 1.02*footlength

5. No, the lines shouldn't be the same because they solve different optimization problems.