HW 0: Due Monday, Sept. 26 (You will upload your written report as a Word or PDF file to the HW 0 link in PolyLearn. Start this process early in case you have any problems.)

Part I: You will each have a question taped onto your back. You will not know what the question asks. Instead, at least 15 people in the room will tell you their answer to your question, and you will record the numerical responses onto an index card. Please keep these "rules" in mind as you respond to each other’s questions:

- Only give the numerical answer
- Do not use units (e.g., dollars, miles, etc.)
- Try not to react in a manner that could "give the answer away"
- For some questions you won’t know the answer, give your best possible guess, and try to not make it clear that you are just guessing 😊
- If a question says “you,” that refers to the person answering the questions, e.g., if the question was “How many years have you lived in California?,” One person may say 18, another may say 1.

When you have received at least 15 answers, ask the TA to remove the question, but make sure you know the question number.

(a) Once you have everyone’s answers to your question, your task is to make a graph of the results. It may be a “hand-drawn” graph (points for creativity) but then you will need to take a picture or something so you can submit it electronically. You may also make a “dotplot” using the Descriptive Statistics applet and then include a screen capture in your report (see Technology instructions in PolyLearn). Be sure to include the question number with your graph.

(b) Briefly summarize to someone (as if they couldn’t see your graph), the main features/patterns of your data. You do not need to use technical language but should try to be as succinct as possible (how little can you say and still have them be able to make a rough sketch of the same graph?).

(c) Based on the patterns in your graph, what do you think the question was? (This may be a wild guess, but you should include some justification based on the graph.)

Part II: Below are two histograms of times to finish local half-marathons. The times are along the horizontal axis and the heights of the bars display the number of runners in that time interval (e.g., one runner in Race A finished between 50 and 100 minutes; one runner in Race B finished between 50 and 75 minutes). One race is the very popular and fairly flat City-to-Sea half-marathon from downtown SLO to Pismo, run every October. The other was part of the inaugural SLO Ultra at Wild Cherry Canyon races earlier this month. This was a trail run with lots of elevation gain during the race.
(a) Which graph (Race A or Race B) do you think belongs to the City-to-the-Sea race and which to the Cherry Canyon race? Be sure to justify your choice and any assumptions you are making.

(b) Suggest a better way to visually display these two distributions to help you compare them.

The Wild Cherry event offered both a half-marathon and a full-marathon (and a 50-mile!). Below are the paces of the runners in these two races (average time to run one mile).

(c) Describe the main similarities and the main difference(s) you see between these two distributions.

(d) Conjecture which race (A or B) is the half-marathon and which is the full-marathon. Justify your choice.