MATH 307
Spring 2023
HW 7: Due 03/01 (02)

"Take chances, make mistakes. That's how you grow. Pain nourishes your courage. You have to fail in order to practice being brave."
—Mary Tyler Moore

Problem 1. (10pt) Being as detailed as possible, answer the following:

(a) What are two measures of 'center' for a dataset?

(b) What are two measures of 'variability' for a dataset?

(c) Name a measure of center which is robust and a measure of center which is not robust.

Problem 2. (10pt) Stewart is tracking snowfall received over the past few days in his area. He finds the following number of inches of snow has fallen over the past few days:

$$1.5" \qquad 4.2" \qquad 0" \qquad 0.8" \qquad 5.1"$$

(a) Find the mean inches of snow that fell this week.

(b) Find the standard deviation for the this week's snowfall.

(c) If Stewart underestimated the inches that fell each day by 0.5", what would be the average snowfall for the week?

Problem 3. (10pt) Charlie is at a town hall meeting. He goes around the room and asks each person their age. Charlie finds the following responses for the ages of the people at the meeting:

$$66 \quad 50 \quad 67 \quad 40 \quad 70 \quad 56 \quad 69 \quad 57 \quad 40 \quad 44$$

(a) Find the median for this dataset.

(b) Find the IQR for this dataset.

(c) Sketch a box and whisker plot for this dataset.

Problem 4. (10pt) Lorelei is finding the mean of the numbers 17, 18, 26, 19. She finds that the mean is 40. By comparing Lorelei's mean as a measure of 'center' to the size of the numbers, how would you explain to her why this cannot be correct. What has Lorelei done incorrectly? How would you explain to her how to fix her work?