

## STAT 251 Statistical Inference for Management I Winter 2012

### Quiz 8

Taken on Mon Jan 23. You may work with a group of as many as 4 students, submitting one quiz with all names, provided that you all contribute to the work. You may use your notes.

1. Create an example of 10 hypothetical exam scores (between 0 and 100, inclusive, with repeats allowed) with the property that the inter-quartile range (IQR) equals 0 but the standard deviation does not equal 0. Do not bother to calculate the standard deviation.
2. A third measure of variability, in addition to SD and IQR, is the range. The range is defined to be the largest value in the dataset minus the smallest value in the dataset. Is the range resistant to outliers? Explain briefly.
3. What effect would adding ten points to every exam score in a class have on the inter-quartile range (IQR) of the scores? Be specific and explain your answer.

Birthweights of babies in the U.S. follow a mound-shaped distribution with mean 3250 grams and SD 550 grams.

4. Between what two values do 95% of all birthweights fall?
5. A baby weighing less than 2500 grams is classified as being of low birthweight. How many standard deviations below the mean is this birthweight?