Normal Distributions, Boxplots, and Outliers

by Craig W. Slinkman

September 7, 2015

Suppose we have a normal distribution with a mean of and a standard deviation of . We want ti determine and for this distribution in terms of and .

We know that

Solving for we obtain

LIkewise for Q3 we find

We can now compute the IQR for a normal distribution with mean and .

Simplfying and observing that

we obtain

Since

We express the inter-quartile range, in terms of the standard deviation,