ECO220Y: Homework, Lecture 2 - SOLUTIONS

(1) Many possible solutions. One example: 3 3 3 3 3 5 5 5 5 5

(2) Given that all three have the same sample mean and sample range, we can focus on the shape of the distribution to answer. Sample 1 has the smallest sample standard deviation and Sample 3 has the largest sample standard deviation. You should explain the intuition.

(3) Need to find the value such that 15% of the observations lie below it. This is a density histogram so the AREA of the bars tells us the fraction of observations in that bin (class).

Start from the left because looking for the 15^{th} percentile.

Area of a rectangle: b*h. The base is the bin width. Looking at the histogram we can see that the bin width is 0.25.

(0.25)*(0.05) = 0.0125
(0.25)*(0.25) = 0.0625
(0.25)*(0.3) = 0.075
0.0125+0.0625+0.075 = 0.15

So the 15^{th} percentile is -0.5.

(4) Ask in TA Tutorials or TA Office Hours if you are not sure about your answer.