UNIVERSITY OF NEW HAVEN

quiz 3
math2228
u new haven
Mon, 16 Sept

name: Solution

1 (10 points). William Sealy Gosset worked at the Guinness Brewery in Dublin and made substantial contributions to the practices of statistics. In his work at the brewery, he collected and analyzed a great deal of data. Archives with Gosset's handwritten tables, graphs, and notes have been preserved at the Guinness Storehouse in Dublin. In one study, Gosset examined the change in the double stout market before and after World War I. For various regions in England and Scotland, he calculated the ratio of sales in 1925, after the war, as a percent of sales in 1913, before the war. Here are the data:

Bristol	94	Glasgow	66
Cardiff	112	Liverpool	140
English Agents	78	London	140
English O	68	Manchester	109
English P	46	Newcastle-on-Tyne	118
English R	111	Scottish	24

(a) Compute the mean for these data.
(b) Compute the median for these data.
(c) Which measure do you prefer for describing the center of this distribution? Explain your answer. (You may include a graphical summary as part of your explanation.)

(a) $\dfrac{94+112+78+\cdots+109+118+24}{12} = 92.167$

(b) Written in order: 24, 46, 66, 68, 78, 94, 109, 111, 112, 118, 140, 140

The middle two numbers are 94 & 109 & the median is their average: $\dfrac{94+109}{2} = 101.5$

(c) The Scottish datum is an outlier & the median is less sensitive to outliers, so the median is the preffered measure.