MATH 10B with Prof. Stankova
DIS 102; TTh 8:00∼ 9:30am
GSI: Seewoo Lee

Quiz 12

Student:
SID:
Tue 4/23/19

True/False - No explanation needed. (2pts)

1. Z-statistic is appropriate for small sample size. True/False
2. The higher the significance of a test, the higher the probability of rejecting a true Null hypothesis. True/False

Problems - Need justification. No justification means **zero**!

Boys of a certain age are known to have a mean weight of $\mu = 85$ pounds. A complaint is made that the boys living in a municipal children's home are *underfed*. As one bit of evidence, $n = 100$ boys (of the same age) are weighed and found to have a mean weight of $\bar{x} = 80$ pounds. It is known that the population standard deviation σ is 20 pounds.

1. Assume that we want to determine whether the average is 85 or smaller. Set the appropriate null hypothesis H_0 and alternative hypothesis H_1. Is this one-sided or two-sided? (4pts)

2. By using Z-statistic, draw a conclusion (reject H_0 or not?). Use the significance level $\alpha = 0.02$. You can use the following standard normal table. (5pts)

z	0.00	0.01	0.02	0.03	0.04
1.9	0.4713	0.4719	0.4726	0.4732	0.4738
2.0	0.4772	0.4778	0.4783	0.4788	0.4793
2.1	0.4821	0.4826	0.4830	0.4834	0.4838
2.2	0.4861	0.4864	0.4868	0.4871	0.4875
2.3	0.4893	0.4896	0.4898	0.4901	0.4904
2.4	0.4918	0.4920	0.4922	0.4925	0.4927
2.5	0.4938	0.4940	0.4941	0.4943	0.4945

3. What can we do if the population standard deviation is unknown and the sample size is small? (1pt)