

Quiz 12

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

1. The alternative hypothesis is a theory that we believe is false. True/False
2. Maximum likelihood estimator of mean for normal distribution is unbiased. True/False

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

You suspect that a 12-sided die is biased toward coming up 12s. (The possible rolls are from 1 to 12). Let $H_0 : p = \frac{1}{12}$ and $H_1 : p > \frac{1}{12}$, where p is the probability that 12 comes out.



1. If you get two 12 in three rolls, what can you conclude with significance level $\alpha = 0.05$? (5pts)

2. If you get twenty-two 12 in 176 rolls, what can you conclude with significance level $\alpha = 0.05$? You may use Z -test with the following standard normal table. (Note that $176 = 11 \cdot 16$.) (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