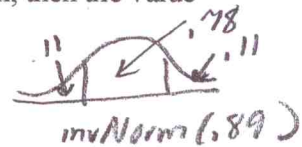


I. Multiple Choice, True/False, Short Answer. (Multiple choice questions are 2 points each, others as indicated – 36 points total)

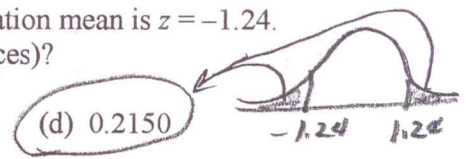
1. If we want to compute a 78% confidence interval for a population mean, then the value of z^* (rounded to three decimal places) will be:

- (a) 0.772 (b) 1.227 (c) 1.534 (d) None of the above



2. The test statistic for a two-sided significance test for a population mean is $z = -1.24$. What is the corresponding p -value (rounded to four decimal places)?

- (a) 0.1075 (b) 0.8925 (c) 0.7850



3. Write “true” or “false” next to each statement according to which is correct. (2 points each – 8 points total)

False The population mean is always contained in a z or t confidence interval for a population mean.

False Keeping the sample size fixed, the margin of error for a z -confidence interval for a population mean μ will increase if the confidence level is decreased.

True At the same level of confidence, the margin of error for a z -confidence interval for a population mean μ will decrease if the sample size is increased.

True If the hypothesis test: $H_0: \mu = \mu_0$ versus $H_a: \mu \neq \mu_0$ for a population mean μ is significant at the $\alpha = 0.05$ level, then the corresponding 95% confidence interval for μ will not contain μ_0 .

4. Each of 60 randomly chosen subjects is asked to guess an integer from 1 to 10. Let X be the number of subjects that guess the integer 5. Assuming the subjects are guessing randomly then X has a binomial distribution (yes, I am telling you this!) with parameters $n = \underline{60}$ and $p = \underline{1/10}$. (2 points each – 4 total)

or .10

5. Subjects in a weight loss experiment are put on a special diet. The subjects are weighed at the beginning of the diet and weighed six weeks later at the end of the diet. Which of the following tests of significance will you use to determine if the diet was successful?

(a) The two sample t -test.

(b) The paired t -test.

(c) The z -test for a single population mean.
proportion.

(d) The z -test for a population proportion.

