

Statistics for Managers -- Test 2 Dr. Douglas H. Jones

Name: _____

SSN: _____

Instructions: Either express mail or email your Test 2 answers and Project 2a, b by 18-Aug-99 to:

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MULTIPLE CHOICE

20. Real Estate Exam scores are normally distributed with a mean of 430 and a standard deviation of

1. Find the probability a randomly selected exam scored lower than 458.
 - a. .4192
 - b. .9192
 - c. .0808
 - d. Approximately 85%

2. What proportion of the scores fell between 398 and 406?
 - a. .4452
 - b. .3643
 - c. .8095
 - d. .0603

3. If a teacher wants to fail only the worst 2.5% grades, what score should she set as the cutoff point between pass and fail? Assume that the best score possible is 500.
 - a. 431.96
 - b. 469.20
 - c. 428.04
 - d. 390.80
 - e. 1.96

A beer company has two objectives:

- A) To make profits
- B) To make sure advertising is not misleading

To accomplish objective A, the company requires that no more than .2% of their 12 ounce bottles of beer contain more than 12.1 ounces. To accomplish objective B, the company requires that at least 97.5% of their bottles of beer contain more than 12 ounces. The amount of beer dispensed by the filling machine has a normal distribution with a standard deviation of .01 ounces. The company can set the value of the mean on the machine.

4. What setting should the company use for the mean to meet objective A?
 - a. 12 ounces
 - b. ≤ 12.0712 ounces
 - c. ≤ 12.1288 ounces
 - d. ≤ 12 ounces
 - e. Not enough information.
5. What setting should the company use for the mean to meet objective B?
 - a. ≥ 12 ounces
 - b. ≥ 11.9804 ounces
 - c. ≥ 12.0196 ounces
 - d. ≥ 12.1288 ounces
 - e. Not enough information.

Most copy machines are basically the same. For companies to succeed in the copy industry, they must sell service to their customers. Suppose Xerox claims that one particular copy machine has a distribution of lifetimes that has a mean of 10,000 copies and a standard deviation of 1250 copies.

6. If we sampled 100 of this type of copy machine, find the probability that the sample mean lifetime would exceed 10,250 copies.
 - a. .4772
 - b. .0228
 - c. .0793
 - d. .4207

7. Find the probability that the sample mean of the 100 copy machines will fall between 9,000 and 10,125 copies.

- a. .8413
- b. .0398
- c. .3279
- d. .3413

8. Fill in the blank. The _____ guarantees the sampling distribution of the sample mean is approximately normally distributed when the sample size is sufficiently large.

- a. bias
- b. sampling distribution
- c. randomness
- d. Central Limit Theorem

The unemployment rates for each of the 50 states were recorded and summary statistics were calculated below:

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Mean: 6.0
Std. Dev: 2.2
n: 50

9. Where would we expect to find approximately 95% of the unemployment rates?

- a. Between 3.8 and 8.2
- b. Between 1.6 and 10.4
- c. Between -0.6 and 12.6
- d. Less than 12.6

10. What would a z score of 1.2 indicate for Florida's unemployment rate?

- a. Florida's unemployment rate was 1.2 standard deviations above the mean unemployment rate.
- b. Florida's unemployment rate was 1.2 times above the mean unemployment rate.
- c. Florida's unemployment rate was 1.2%.
- d. Florida's unemployment rate was 1.2% higher than the mean unemployment rate.