

Assignment # 2 (CLO-3), 15 Dec 2025, Total Marks: 10

Name: _____

Registration #: _____

Question 1 Most graduate schools of business require applicants for admission to take the Graduate Management Admission Council's GMAT examination. Scores on the GMAT are roughly normally distributed with a mean of 527 and a standard deviation of 112.

- a. What is the probability of an individual scoring above 500 on the GMAT?
- b. How high must an individual score on the GMAT to score in the highest 5%?

Question 2 The Edwards's Theater chain has studied its movie customers to determine how much money they spend on concessions. The study revealed that the spending distribution is approximately normally distributed with a mean of \$4.11 and a standard deviation of \$1.37.

- a. What percentage of customers will spend less than \$3.00 on concessions?
- b. What spending amount corresponds to the top 87th percentile?

Question 3 The actual amount of instant coffee that a filling machine puts into "4-ounce" jars may be looked upon as a random variable having normal distribution with $\sigma = 0.04$ ounce. If only 2% of the jars are to contain less than 4 ounces, what should be the mean fill of these jars.

Question 4 A fellow researcher claims that at least 15% of smokers fail to eat any fruits and vegetables at least 3 days a week. You find this hard to believe and decide to check the validity of this statistic by taking a random (representative) sample of smokers. Do you have sufficient evidence to reject your colleague's claim if you discover that 17 of the 200 smokers in your sample eat no fruits and vegetables at least 3 days a week?

Question 5 A random sample of 100 recorded deaths in the United States during the past year showed an average life span of 71.8 years. Assuming a population standard deviation of 8.9 years, does this seem to indicate that the mean life span today is greater than 70 years? Use a 0.05 level of significance.

Instruction:

- The assignment should be solved in a hand-written form and on individual basis.
- The assignment solution should be submitted in soft form as a single .pdf document.
- Make use of graphical illustrations where necessary and show all the steps to gain marks.

Note: Copying assignments from OTHERS is strictly not allowed and will result in an award of zero marks.