DIGITAL ASSINGMENT-2

Normal Distribution Questions:

1. A factory produces steel rods with a mean length of 200 cm and a standard deviation of 5 cm. Assuming the lengths follow a normal distribution, what is the probability that a randomly selected rod is longer than 210 cm?

2. The lifespans of LED bulbs are normally distributed with a mean of 25,000 hours and a standard deviation of 2,500 hours. What is the probability that a randomly chosen LED bulb lasts less than 22,000 hours?

3. The weights of mangoes are normally distributed with a mean of 300 grams and a standard deviation of 20 grams. What is the probability that a randomly chosen mango weighs between 280 grams and 320 grams?

4. A company packs cereal boxes with an average weight of 500 grams and a standard deviation of 10 grams. If a sample of 16 boxes is selected, what is the probability that the sample mean weight is greater than 505 grams?