

MATH225N Week 5 Assignment: Evaluating Probability Using the Normal Distribution

Q1

After collecting the data, Peter finds that the standardized test scores of the students in a school are normally distributed with mean 85 points and standard deviation 3 points. Use the Empirical Rule to find the probability that a randomly selected student's score is greater than 76 points. Provide the final answer as a percent rounded to two decimal places.

Ans: 99.85%

Q2

A normal distribution is observed from the number of points per game for a certain basketball player. The mean for this distribution is 20 points and the standard deviation is 3 points. Use the empirical rule for normal distributions to estimate the probability that in a randomly selected game the player scored less than 26 points.

- Provide the final answer as a percent rounded to one decimal place.

Ans: 97.5%

Q3

The number of pages per book on a bookshelf is normally distributed with mean 248 pages and standard deviation 21 pages. Using the empirical rule, what is the probability that a randomly selected book has less than 206 pages?

- Provide the final answer as a percent rounded to one decimal place.

Ans: 2.5%

Q4

A normal distribution is observed from the number of points per game for a certain basketball player. If the mean is 15 points and the standard deviation is 3 points, what is the probability that in a randomly selected game, the player scored greater than 24 points? Use the empirical rule

- Provide the final answer as a percent rounded to two decimal places.

Ans: 0.15%

Q5