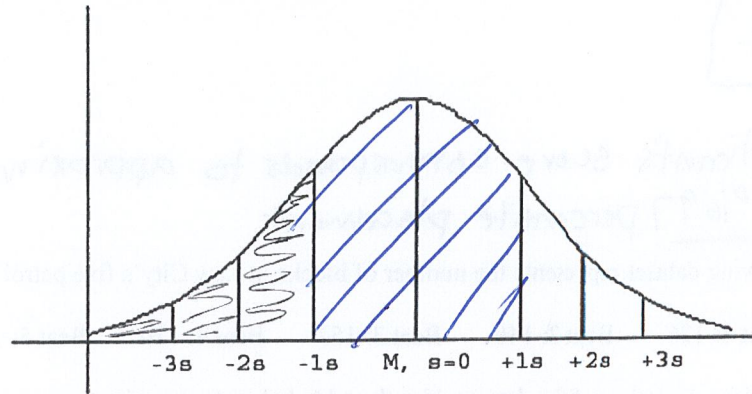


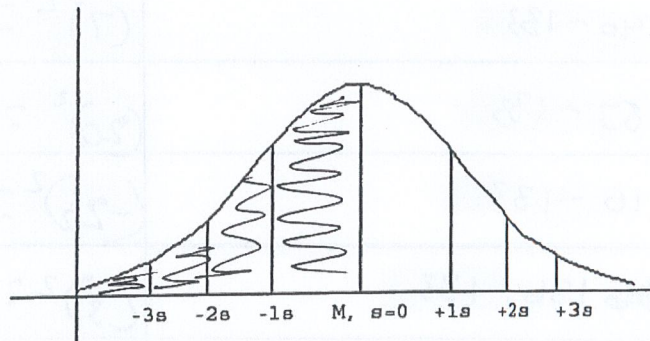
Final Exam (48 points on this section)

Questions 1-34 to be answered directly in Canvas.

35. Shade in the area under the normal probability distribution that corresponds to 16% of the total data represented by the curve. (2 points)



36. Shade the area of the graph that corresponds to 50% of the area under the curve (50% of the data in the distribution). (2 points)



37. The Jefferson City Police Department recently offered an exam to a potential pool of applicants. The exam scores were normally distributed with a mean of 100 and a standard deviation of 10. One of the applicants scored 119.2 on the exam. Give the z-score value (1 point) and the percentile this score corresponds to for the placement of this candidate (1 point). Make sure to use your z-score table to give your final answer in a percentage. This question is worth 2 points total.

Applied Statistics Final Exam (48 points)

38. The following dataset represents the number of blocks in Law City's five patrol beats:

Beat 1: 126 Beat 2: 140 Beat 3: 153 Beat 4: 110 Beat 5: 136

Calculate the standard deviation of the dataset. Use the table below to organize your work. You must show your work for each step to receive credit. (14 points)

x	deviation from the mean	(deviation from the mean) ²
		Total:

Mean =

Standard deviation =

Applied Statistics Final Exam (48 points)

39. The following data represents the time, in months, that Wildcat Police Department's fleet of patrol units have been in service:

8 27 27 34 (34) 42 44 44 45

- a. Identify the median of the data. (2 points)

34

- b. Calculate the mean of the data. (2 points)

40. You are now tasked with drafting a proposal that makes a case that the department's upcoming budget needs to include funds for new vehicles. How might you evaluate and, if necessary, make adjustments to the data in preparing your proposal when accounting for the outliers? (Hint: Be sure to include all three options for outliers in your answer). (3 points)

41. The City of Wildcat wants to conduct a citizen satisfaction survey about traffic enforcement in their city. You have an associated t-score of 1.96 (95% confidence). You look at previous data and estimate the standard deviation at 31 points. Our acceptable margin of error is two points. How large of a sample size would we need to take to be fairly confident in our sample? Be sure to use your sample size formula as given in the textbook and insert the values above to determine your final sample size answer. (5 points)