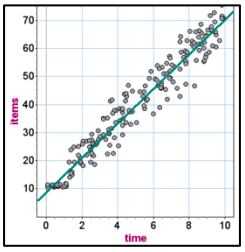
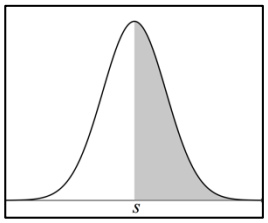
DIGITLE – SAT/ACT
Puzzle 519 – Data Collection & Conclusions

Single Digit Answers:

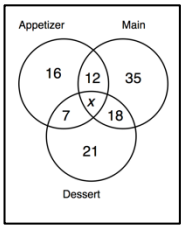
1) Over a period of 200 days, one lucky customer gets $10 and a free shopping spree at a dollar store. They are given a random amount of time from 0 to 10 minutes and allowed to choose items, but each must be different (they cannot take 15 rolls of wrapping paper). A scatterplot of the amount of time vs the number of items taken is shown to the right with the regression line of the data shown. To the nearest integer, how many items does the average shopper take for each minute of time?



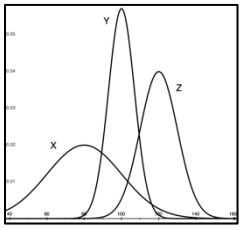
2) In a normal distributions, we represent a data value by the number of standard deviations the value is above the mean is its z-score with positive z-scores above the mean and negative z-scores below the mean. In the figure to the right , the shaded area is 50% of the total area below the curve. What is the z-score of s?



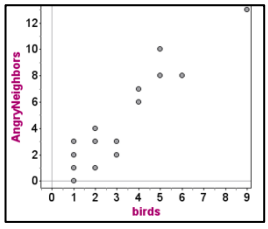
3) In a restaurant, diners order appetizers, main courses, and/or desserts. as shown by the Venn diagram to the right. If the difference in the number of diners who order only a main course and dessert (no appetizer) and the number of diners who who order both an appetizer and dessert is equal to 3, find the value of diners who ate an appetize, a main course, and dessert.



4) To the right are 3 graphs representing distributions, X, Y, and Z. The value of a is based on the graph with the largest mean: 3 points for X, 2 points for Y and 1 point for Z. The value of b is based on the graph with the smallest standard deviation. 3 points for X, 2 points for Y and 1 point for Z. Find the value of $|a-b|$.



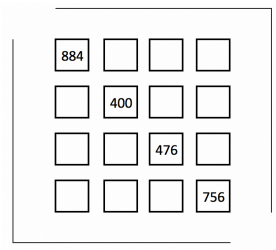
5) A neignborhood has a number of birds that visit it and because of their squawking and antics, the neighbors get angry. A dotplot of birds versus angry neighbors is shown with the regression line of just fit as Angry Neighbors = 1.54 (birds) – 0.32. If there are 9 angry neighbors, project to the nearest integer the number of birds in the neighborhood.



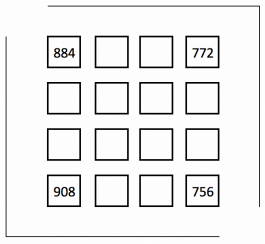
5-Digit Answer:

6) An open-air market has 16 stalls in a 4 by 4 grid with major walkways around it and small aisles in between. The market owner is interested in the typical number of people who purchase from the market in the course of a week. He samples the number of customers from 4 different stalls. Below are 3 different possible sampling techniques. Using the most appropriate one will give an estimate of how many weekly customers for the entire market?

I.



II.



III.