

Name: _____

Class: _____

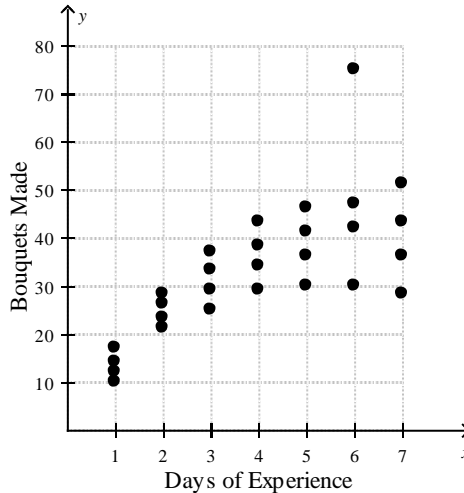
AU5: Statistics Review

Total: 40 pts

Multiple Choice:

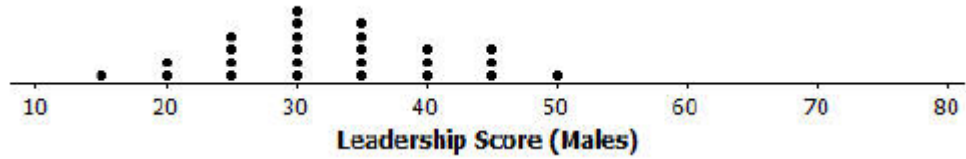
Identify the choice that best completes the statement or answers the question. (2 pts each)

- _____ 1. A floral delivery company conducts a study to measure the effect of worker experience on productivity. Tell whether the scatter plot appears to have a linear or non-linear pattern of association. Describe any clustering and identify outliers.



- a. The pattern of association appears to be linear.
There appears to be clustering of the data points at 1 and 2 days. After that, the results become less clustered.
There do not appear to be any outliers.
- b. The pattern of association appears to be non-linear.
There appears to be clustering of the data points at 6 and 7 days. Before that, the results are less clustered.
There do not appear to be any outliers.
- c. The pattern of association appears to be non-linear.
There appears to be clustering of the data points at 1 and 2 days. After that, the results become less clustered.
The point near (6, 75) appears to be an outlier.
- d. The pattern of association appears to be linear.
There appears to be clustering of the data points at 1 and 2 days. After that, the results become less clustered.
The point near (6, 75) appears to be an outlier.

_____ 2. 25 males were selected at random from a database to determine a leadership score.



Which of the following best describes the distribution of the data?

- a. The distribution is symmetric.
- b. The distribution is skewed with the tail to the left.
- c. The distribution is skewed with the tail to the right.
- d. The distribution is uniform.

_____ 3. Which table does *not* show bivariate data?

a.

Height (inches)	Weight (pounds)
39	50
48	70
60	90

b.

Gallons	Miles Driven
15	300
20	400
25	500

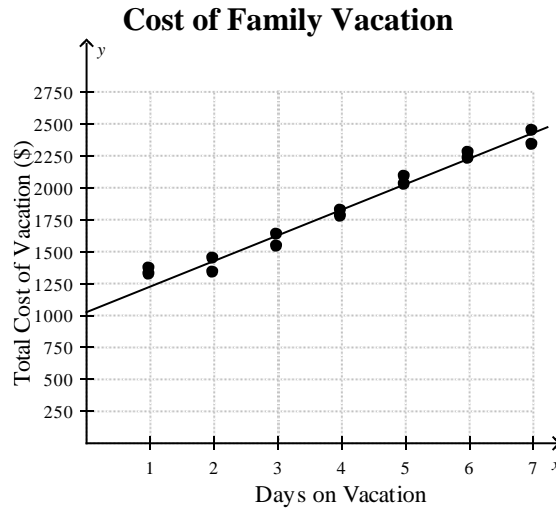
c.

Quiz Average	Frequency
70	12
80	15
90	6

d.

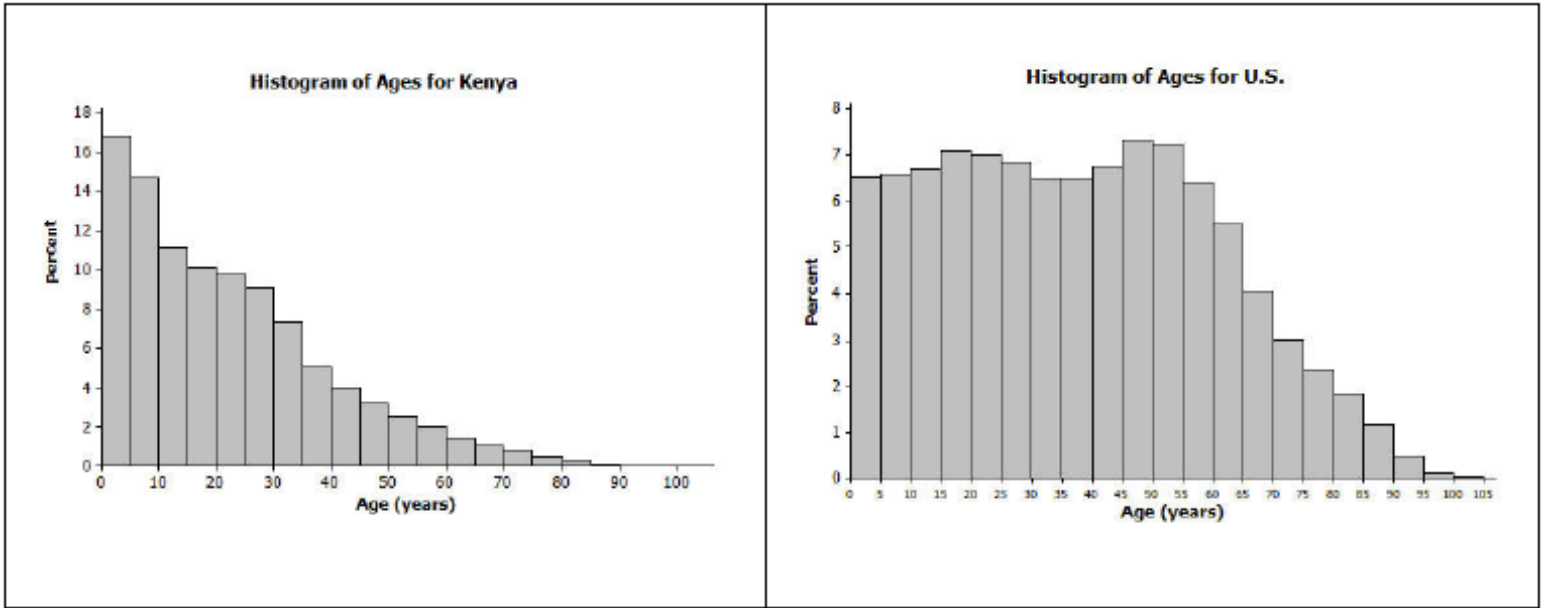
Speed (mph)	Distance (miles)
40	80
50	120
55	150

_____ 4. Find an equation in slope-intercept form for the line of best fit, and tell what the slope and intercepts represent in terms of the data it models. Give the slope and intercept to the nearest integer.



- a. The slope of the best-fit line is 200, and the y-intercept is 1000.
 The slope, \$200 per day, is the typical daily cost, for instance, hotel and meal expenses.
 The y-intercept, \$1000, does not depend on the number of days the vacation lasts. It is a one-time cost, such as air fare.
- b. The slope of the best-fit line is 1000, and the y-intercept is 200.
 The slope, \$1000 per day, is the typical daily cost; for instance, hotel and meal expenses.
 The y-intercept, \$200, does not depend on the number of days the vacation lasts. It is a one-time cost, such as air fare.
- c. The slope of the best-fit line is 1000, and the y-intercept is 200.
 The slope, \$1000, does not depend on the number of days the vacation lasts. It is a one-time cost, such as air fare.
 The y-intercept, \$200 per day, is the typical daily cost; for instance, hotel and meal expenses.
- d. The slope of the best-fit line is 200, and the y-intercept is 1000.
 The slope, \$200, does not depend on the number of days the vacation lasts. It is a one-time cost, such as air fare.
 The y-intercept, \$1000 per day, is the typical daily cost; for instance, hotel and meal expenses.

_____ 5. What 5-year interval of ages represented in the 2010 histogram of the Kenyan age distribution has the most people?



- a. 0-5 years old
- b. 15-20 years old
- c. 50-55 years old
- d. 45-50 years old

_____ 6. The table shows the number of first, second, and third place finishes by members of two teams at a track meet. Of the Panthers, what is the relative frequency who placed first?

	First	Second	Third	Total
Tigers	12	9	8	29
Panthers	8	22	10	40
Total	20	31	18	

- a. 0.2
- b. 0.7
- c. 0.3
- d. 0.8

_____ 7. Which relationship can best be described as causal?

- a. height and intelligence
- b. number of correct answers on a test and test score
- c. shoe size and running speed
- d. number of students in a class and number of students with brown hair

_____ 8. A sample of 12 snowboard prices (in dollars) is shown below.

345 375 356 360 405 350 386 343 402 395 370 392

What is the standard deviation to the nearest hundredth?

- a. 22.49
- b. 373.25
- c. 21.53
- d. 4,479

_____ 9. The freshman class held a canned food drive for 12 weeks. The results are summarized in the table below.

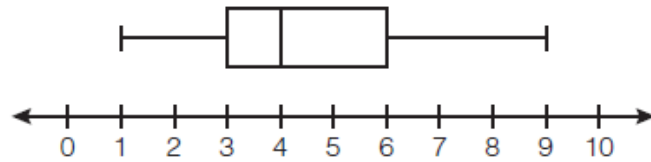
Canned Food Drive Results

Week	1	2	3	4	5	6	7	8	9	10	11	12
Number of Cans	20	35	32	45	58	46	28	23	31	79	65	62

Which number represents the interquartile range of the number of cans of food collected?

- a. 30.5
- b. 29.5
- c. 59
- d. 6

_____ **10.** A movie theater recorded the number of tickets sold daily for a popular movie during the month of June. The box-and-whisker plot shown below represents the data for the number of tickets sold, in hundreds.



Which conclusion can be made using this plot?

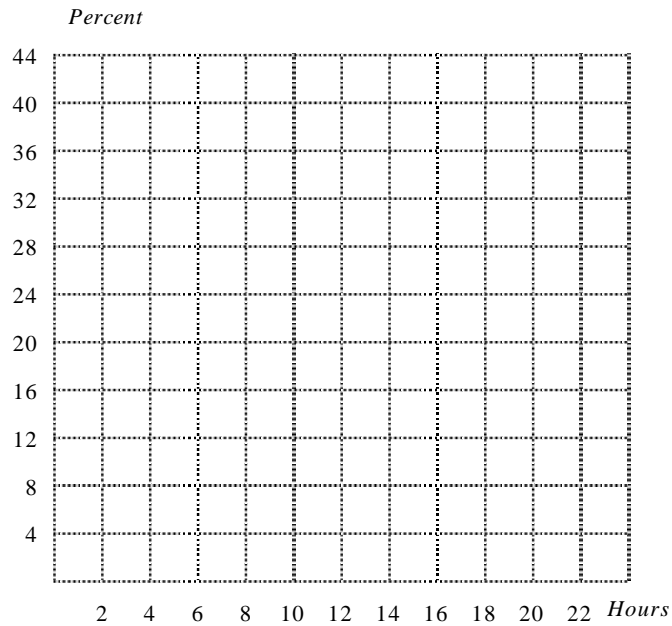
- a.** The second quartile is 600.
- b.** The mean of the attendance is 400.
- c.** The range of the attendance is 300 to 600.
- d.** Twenty-five percent of the attendance is between 300 and 400.

Short Answer:

11. The table shows the relationship between the time a student spends working out each week and his percent improvement on race times. *(6pts total)*

Hours Spent Working Out	6	8	10	12	14	16	18
Percent Improvement	18	18	32	27	31	39	37

- a) Make a scatter plot for the data.



- b) Use the statistical features of your calculator to fit a linear function to the data. Calculate and interpret the correlation coefficient (round to the nearest thousandth).
- c) Use your equation to predict the number of hours the student would be expected to work out if his percent improvement is 50% (round to the nearest hour).

12. Fifty moviegoers were surveyed about their favorite movie types. (6pts total)

- 15 men and 6 women chose “Action” as their favorite type
- 9 men and 10 women chose “Drama” as their favorite type
- 6 men and 4 women chose “Comedy” as their favorite type

a) Use the table below to construct a two-way frequency table.

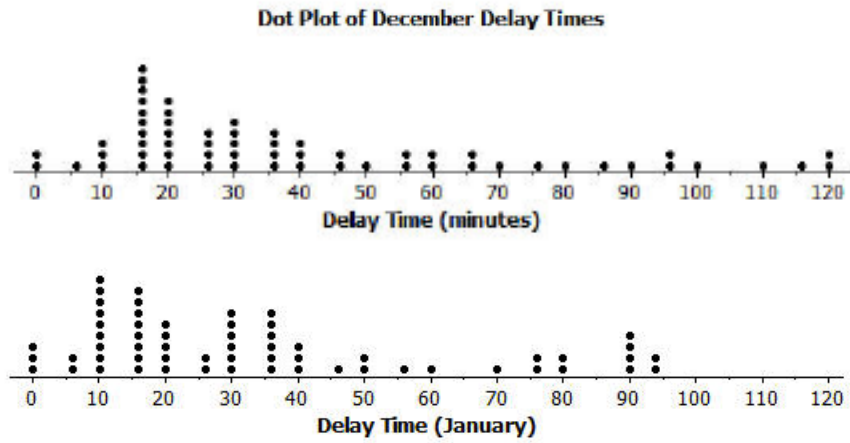
Favorite Movie Types				
	Action	Drama	Comedy	Total
Men				
Women				
Total				

b) Find the relative frequencies to compare and describe the survey.

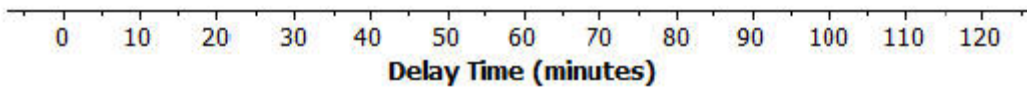
Favorite Movie Types				
	Action	Drama	Comedy	Total
Men				
Women				
Total				

c) Compare and describe (minimum of 3 statements):

13. Transportation officials collected data on sixty flight delays in the month of December and sixty flight delays in the month of January. *(4pts total)*



Construct a box plot for each month:

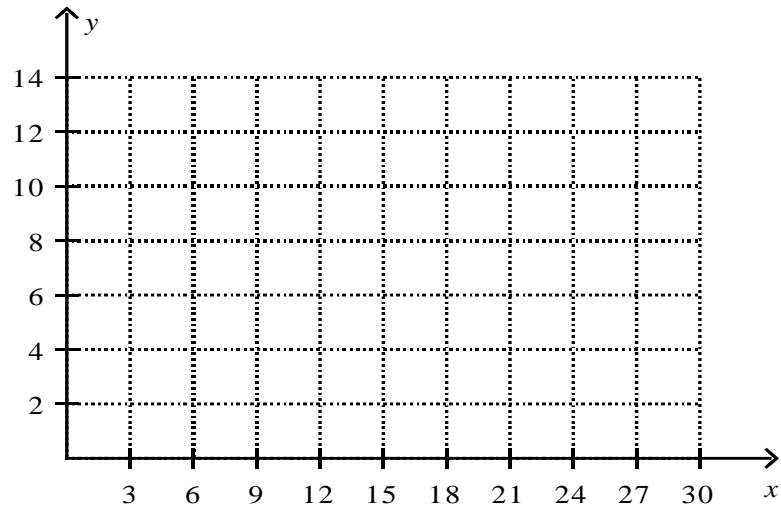


How is the January flight delay distribution different from the December flight delay distribution? Justify your response.

14. Twenty-five students were surveyed about the number of days they played outside in one month. The results of this survey are shown below. (4 pts)

3, 3, 4, 4, 4, 4, 5, 6, 6, 6, 6, 6, 6, 6, 7, 7, 7, 7, 7, 7, 16, 17, 22, 22, 25

- a. On the grid below, create a histogram based on the data.



- b. Identify the typical number of days spent outside by the twenty-five students.

- c. Use the statistical features of your calculator to find the standard deviation of the data set (round to the nearest hundredth).

Standard Deviation: _____