**Name: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Class: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**

**M8-U9: Lesson #6 - Statistics Review Total: 32 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.** 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.

**Cost of Family Vacation**

**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.

\_\_\_\_\_\_ **3.** The scatter plot shows the relationship between the weekly total sales ($) and the number of different rug designs a rug store has. Based on this relationship, predict what the total sales will be when the store has 110 different rug designs.

**a.** $30,000 **b.** $0

**c.** $40,000 **d.** $35,000

\_\_\_\_\_\_ **4.** Which table does *not* show bivariate data?

**a.** **b.**

**c.** **d.**

\_\_\_\_\_\_ **5.** Describe the association between the bivariate data shown in the scatter plot below.

 **a.** strong and positive  **b.** strong and negative

 **c.** weak and positive  **d.** weak and negative

\_\_\_\_\_\_ **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?

**a.** 0.2 **b.** 0.7

**c.** 0.3 **d.** 0.8

**Short Answer:**

**7.** The table shows the relationship between the time a student spends working out each week and his percent improvement on race times. ***(10pts total)***

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

1. Make a scatter plot for the data.

1. Draw a trend line for your scatter plot.
2. Write the equation for your trend line.
3. Use your equation to estimate the number of hours the student would be expected to work out if his percent improvement is 50%.
4. Is the answer to part (d) an example of interpolation or extrapolation? Explain.

**8.** Fifty moviegoers were surveyed about their favorite movie types. ***(10pts 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
1. Use the table below to construct a two-way frequency table.

|  |
| --- |
| **Favorite Movie Types** |
|  | **Action** | **Drama** | **Comedy** | **Total** |
| **Men** |  |  |  |  |
| **Women** |  |  |  |  |
| **Total** |  |  |  |  |

1. Find the relative frequencies to compare and describe the survey.

|  |
| --- |
| **Favorite Movie Types** |
|  | **Action** | **Drama** | **Comedy** | **Total** |
| **Men** |  |  |  |  |
| **Women** |  |  |  |  |
| **Total** |  |  |  |  |

1. Compare and describe (minimum of 3 statements):