|  |  |
| --- | --- |
| Days Sold (x)Name \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Date \_\_\_/\_\_\_/\_\_\_\_ Period \_\_\_\_**Correlation coefficient and Line of best fit** | Total Cost (y) |
| 1 | 3.00 |
| 2 | 5.00 |
| 3 | 7.00 |
| 4 | 9.00 |
| 5 | 11.00 |



Correlation coefficient (r) : \_\_\_\_\_\_\_\_\_\_\_\_

Strong /Weak Positive/Negative

Line of best fit (Linear Regression Equation y = mx+b): \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Is there Causation? Y or N Is there Association? Y or N Why? \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Predict the total cost after selling lemonade for 10 days \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Using the linear regression equation, find the value of y given x=5. Why is the answer 11.00? \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_



|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Jolly Ranchers (x) | 2 | 5 | 8 | 10 |
| Total Cost (y) | 5.6 | 4.7 | 3.8 | 1.9 |

Correlation coefficient (r) : \_\_\_\_\_\_\_\_\_\_\_\_

Strong /Weak Positive/Negative

Line of best fit (Linear Regression Equation y = mx+b): \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Is there Causation? Y or N Is there Association? Y or N Why? \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Predict the total cost for 15 bags \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Using the linear regression equation, find the value of y given x=2. Why is the answer not 5.6? \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Average Price



**0 4 8 12 16 20 24 28**

**1.00**

**2.00**

**3.00**

**4.00**

**5.00**

**6.00**

**7.00**

|  |  |
| --- | --- |
| Years Since 1970 | Average Price |
| 0 | 2.40 |
| 4 | 2.90 |
| 8 | 3.50 |
| 12 | 4.40 |
| 16 | 4.90 |
| 20 | 5.20 |
| 24 | 6.10 |
| 28 | 7.25 |

Correlation coefficient (r) : \_\_\_\_\_\_\_\_\_\_\_\_

# of Years Since 1970

Strong /Weak Positive/Negative

Line of best fit (Linear Regression Equation y = mx + b): \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Is there Causation? Y or N Is there Association? Y or N Why? \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Predict the average price in 2013 \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Why does x = 20 not give you y = 5.20 when using the linear regression equation (TREND LINE)? \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

What type of correlation does r = 0.74 represent? \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

What type of correlation does r = -0.89 represent? \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

What type of correlation does r = 0.23 represent? \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

What type of correlation does r = 0.95 represent? \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

What type of correlation does r = -0.37 represent? \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

What type of correlation does r = -0.81 represent? \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

What type of correlation does r =- 0.69 represent? \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

**START HERE WORK BACKWARDS**

 Graph 1 Graph 2 Graph 3







**Weak / Moderate / Strong Weak / Moderate / Strong Weak / Moderate / Strong**

Explain in words the purpose for identifying the correlation coefficient.

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

How do you know if a correlation is likely to have causation?

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

How do you know if a correlation has an association?

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

No correlations will likely have an association, causation, or both?

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Positive and negative correlation will likely have an association, causation, or both?

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

When r = 1 you will likely have an association, causation, or both?

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_