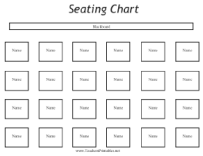
Name: _____ Hour: _____ Date: _____

Does seat location matter – Part 2?



Do students who sit in the front rows do better than students who sit farther away? Mrs. Gallas took a random sample of 30 students from her classes and found these results.

Row	1	1	1	1	1	1	2	2	2	2	2	2	3	3	3	3	3	3
Score	76	77	94	99	88	90	83	85	74	79	77	79	90	88	68	78	83	79

Row	4	4	4	4	4	4	5	5	5	5	5	5
Score	94	72	101	70	63	76	76	65	67	96	79	96

Line of best fit:_____

Slope: b = _____ $SE_b = 1.33$

1. If Mrs. Gallas were to take another random sample of 30 students, do you think the slope of the LSRL would be the same? Why?

2. We are going to construct a 95% confidence interval for the slope of the population regression line. Identify the parameter and statistic.

Parameter:_____ Statistic:_____

3. There are five conditions to check.

(1) Linear: The **scatterplot** needs to show a linear relationship. Also, the **residual plot** doesn't have a leftover curved pattern. Sketch each at right.

(2) Independent:

(3) Normal: A **dotplot of the residuals** cannot show strong skew or outliers. Make one using the applet and sketch it at right.

(4) Equal SD: The residual plot does not show a clear sideways Christmas tree pattern.

(5) Random:

4. Construct the interval:

General Formula: Specific Formula:

Work:

5. Conclude:

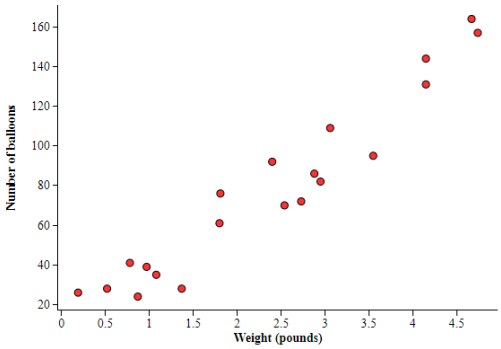
Name: _____ Hour: _____ Date: _____

Confidence Intervals for Slope

Important ideas:

Check Your Understanding

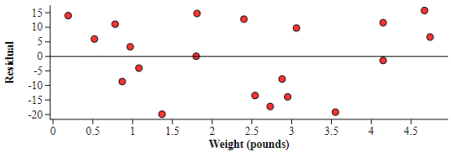
A thrill-seeker wanted to try to travel across a large field while being suspended in the air by holding onto balloons. In order to determine the number of balloons needed per pound of weight, he did a preliminary study. He selects a random sample of 20 rocks of various sizes. He weighed each one and also determined how many balloons are needed to lift the rock. Here is output from a least-squares regression analysis of the data.

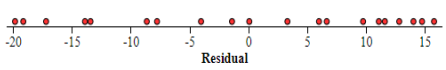


Regression Analysis: Number of Balloons versus Weight

Predictor	Coef	SE Coef	T	P
Constant	6.211	5.5831	1.1127	0.2805
Weight	30.4126	2.0416	14.8968	0.000

s = 12.2625 R-Sq = 0.9250 R-Sq(adj) = 0.9208





Construct and interpret a 90% confidence interval for the slope of the population regression line.