

Activity

# Residual Plots

Created for you by Ms. Ninotsoubarah

**Directions:** For each data set, determine the linear regression equation and correlation coefficient. Then, construct a residual plot. State if a linear model is appropriate for the data. Round your answers to the nearest **hundredth**.

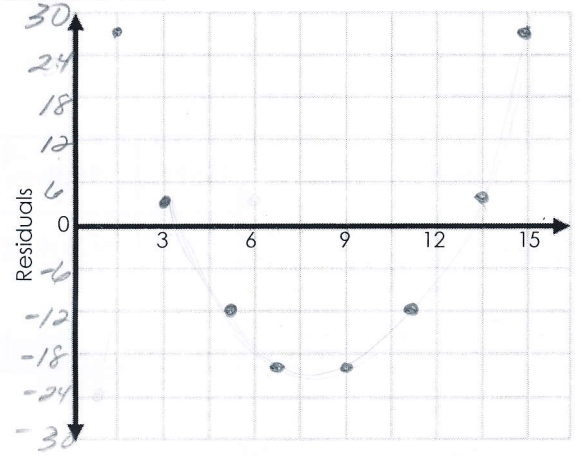
1.

x	1	3	5	7	9	11	13	15
y	2	10	26	50	82	122	170	226
Prediction	-26	6	38	70	102	134	166	198
Residual	28	4	-12	-20	-20	-12	4	28

Linear regression equation:  $y = 16x - 42$

Correlation coefficient:  $0.97$

Residual Plot



not appropriate b/c the residuals form a curve pattern indicating that it is not linear

Name: Key  
April 25 - Algebra 1 Glue on page 14 <sup>13</sup>

HW: Performance Assessment 2 and study for Friday's quiz

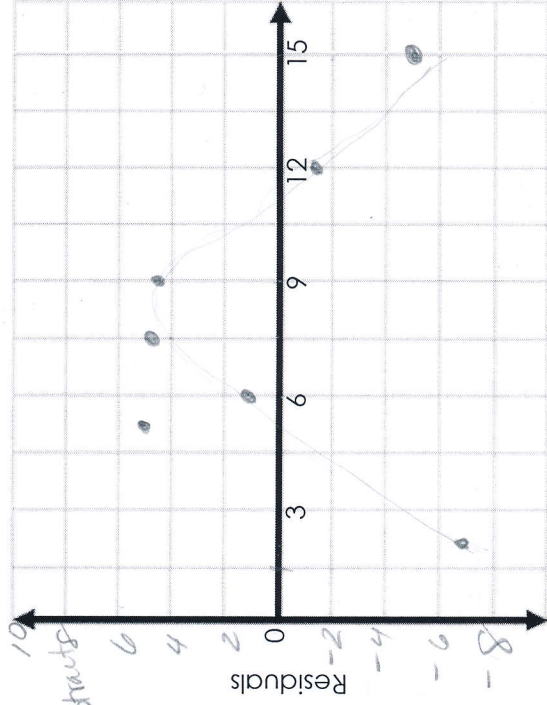
Number of Absences	6	2	15	9	12	5	8
Final Grades %	82	86	43	74	58	90	78
Prediction	80.77	95.25	48.19	69.91	59.05	84.39	73.53
Residual	1.23	-9.25	-5.19	4.09	-1.05	5.61	4.47

Linear regression equation:  $y = -3.62x + 102.49$

Correlation coefficient:  $-0.94$

Has a curve pattern there for  
not a linear regression.

Residual Plot



3.

x	10	20	30	40	50	60	70	80
y	351	601	849	1099	1351	1601	1849	2099
Prediction	350.66	600.46	850.26	1100.1	1349.9	1599.7	1849.5	2099.3
Residual	0.34	0.54	-1.26	-1.06	1.14	1.34	-0.46	-0.26

Linear regression equation:  $y = 24.98x + 100.86$

Correlation coefficient:  $0.97$

Indicates a linear regression  
and a good predictor b/c the  
residual is scattered along the x-axis  
and does not have a curve pattern

Residual Plot

