

Name: _____
Date: _____
Class: _____

Algebra
Unit 12
EC

To be eligible to receive extra credit on the unit test you must have a score below 75. To receive extra credit you must score an 80% or higher on this assignment (anything lower results in no extra credit). If you earn extra credit is calculated in the following manner: $\text{Old Test Score} + (75 - \text{Old Test Score})(2/3) = \text{New Test Score}$. This assignment will not be accepted late for any reason other than missing the day of school it is due in which case it must be turned in the next day you are in school even if you do not have class.

1) [3] Find the residual value for the point (10, 147)

Carbohydrates (x)	Calories (y)
8	120
9.5	138
10	147
6	88
7	108
4	62

2) [3] Find the equation of the line of best fit for the following data:

Overall Student Average	92	98	84	80	75	82
Math Class Average	91	95	85	85	75	78

3) [5] Using the following data, show the table of residual values from you calculator, create a residual plot sketch, and explain if this residual plot indicates that the line of best fit is a good model for the data or not.

Median Diameter of Grains of Sand, in Millimeters (x)	0.17	0.19	0.22	0.235	0.235	0.3	0.35	0.42	0.85
Slope of Beach, in Degrees (y)	0.63	0.7	0.82	0.88	1.15	1.5	4.4	7.3	11.3

4) [3]

Number of Hours, x	1	2	3	4	5	6	7	8	9	10
Number of Bacteria, $B(x)$	220	280	350	440	550	690	860	1070	1340	1680

Create a scatter plot for the following data, which would be the best type of equation to use to model this data? Why?

5) [4] Using the following data find the equation of the line of best fit and the correlation coefficient (use $x = 0$ for 2010). What would this correlation coefficient indicate?

Year	2010	2011	2013	2017
Population	1.2 million	1.4 million	2.1 million	3.3 million

6) [4] Using the following table, find the mean and the median of the list of grades on the last English exam:

Grade	Number of Students
62	21
75	32
81	19
84	27
91	15
95	6
100	2

7) [4] Using the following data, which is the number of gigs of data used by a selection of people, create a stem and leaf.

1.0, 0.6, 5.4, 10.8, 9.4, 2.2, 1.8, 9.0, 1.5, 5.4, 4.1, 2.4, 2.5, 3.1, 3.3, 4.5, 4.2, 2.2, 2.1, 1.0, 9.9, 1.5, 1.6, 2.5, 2.5, 4.1, 4.9, 9.1, 1.9, 1.8, 0.5, 0.4, 2.7, 2.2, 1.4, 9.6, 9.9, 7.5