Warm Up WB 601 #2

Ex 1

x	1	2	3	4	5	6	7
y	2	8	30	105	437	1588	6341

Exponential $y = 0.53(3.81)^x$ 8

23,532.91

2)

X	1	2	3	4	5	6	7	8
Y	32	38	41	39	36	35	36	48

Type: Cubic Equation: _____ Predict x=9: 69.38

$0.44x^3 - 5.71x^2 + 21.8x + 14.93$

3)

X	1	2	3	4	5	6	7
Y	15	26	31	33	32	27	17

$y = -1.92x^2 + 15.65x + 1.57$

Equation: _____ Predict x=8: 3.89

Quadratic

4)

X	1	2	3	4	5	6	7
Y	6	9	12	15	18	21	24

Equation: $y = 3x + 3$ Predict x=8: 27

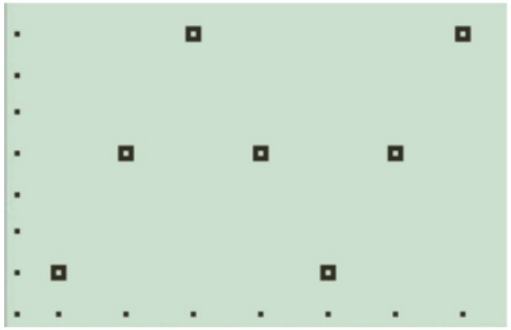
4) LinReg ax+b

8) LinReg a+bx

Linear

5)

X	1	2	3	4	5	6	7
Y	2	5	8	5	2	5	8



$y = 0.33x^3 - 4x^2 + 14.1x - 8.71$

Equation: _____ Predict x=8: 17.05

Cubic

Unit 6: Statistics

More with Regressions

Regression Lines

A Little More Vocab.

WB 602

Interpolation - making predictions within the scope of the known values

Extrapolation - making predictions beyond the scope of the known values

Finding the Correlation Coefficient -

1) **2nd - Catalog (0)**
2) **Diagnostic On**

1. The table lists the population in Waterton between 1960 and 2000. Use years since 1960 to determine the following:

=0 0 10 20 30 40

Year	1960	1970	1980	1990	2000
Population	2,853	3,413	4,132	4,866	5,894

a) What type of regression would best fit the data? Linear

b) Approximate the best-fitting line for this data. $75.35x + 2724.6$

c) What is the correlation coefficient? Very Strong Positive Correlation $r = 0.99$

d) If this pattern was to continue, what would the population be in 2010? $x = 50$ 6492

e) Estimate what the population was in 1985. $x = 25$ 4608
-1960

f) Which estimate would be more reliable? e

Interpolation is considered more reliable

2. The value of Tom's car follows according to the table. Use years since 1950 to determine the following:

	0	10	20	30	40	50	55	60
Year	1950	1960	1970	1980	1990	2000	2005	2010
Cars Sold	$25,210	$16,040	$13,285	$15,250	$25,750	$40,500	$60,650	$98,000

a) What type of regression model would best fit the data? Quadratic

b) What would be the equation for the regression line? $50.35x^2 - 2081.52x +$

c) Use the equation to predict the value of the car in 2003. $x = 53$ $60,581.15 29468.56

d) Use the equation to predict the value of the car in 2016. $x = 66$ $111,412.84

Assignment::
Finish WB 601
WB 602; #1-4, 6 & 8
E.C. for All

Quiz Tomorrow on Regression