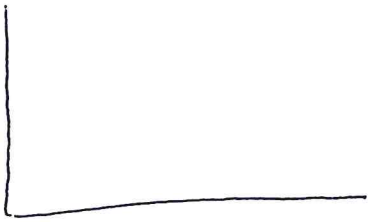
Bellwork Alg 2A Tuesday, November 1, 2016

- Using the graphing calculator make a scatter plot for each set of data.
- Sketch the scatter plot on this paper.
- Decide if the data is best fit with a Linear Regression Equation or a Quadratic Regression Equation and find that equation.
- Write this equation down, rounding to the nearest hundredth as needed.
- Graph this equation along with the scatter plot.
- Use this equation to answer the questions posed for each problem.

1. The table below shows the Population for the given states and the Number of US Representatives in Congress for that state.

State	State Pop (millions)	# of Reps in Congress
AZ	5.6	8
CO	4.6	7
CT	3.5	5
GA	8.7	13
IL	13	19
MO	5.7	9
OH	11	18
RI	1.1	2
UT	2.4	3
WA	6.1	9
WI	5.5	8

Scatter plot



Eq:

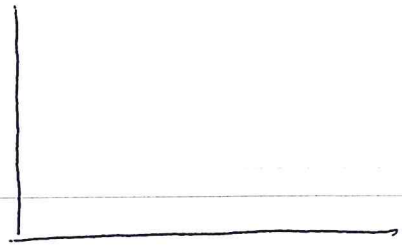
a. Estimate the # of Representatives for Texas, if the Population is 20,000,000.

b. What would a state's population be if they had 15 Representatives?

2. The CN Tower in Toronto, Ontario, is 1821 feet tall. The data in the table below shows the height of a penny when dropped from the top of the tower after each given amount of time.

Time (sec)	Height (ft)
0	1821
2	1757
4	1565
6	1245
8	797

Scatter plot:



Eq:

a. Estimate the height of the penny after 7 seconds.

b. Estimate the height of the penny after 12 seconds.

Bellwork Alg 2A Tuesday, November 1, 2016 Answers

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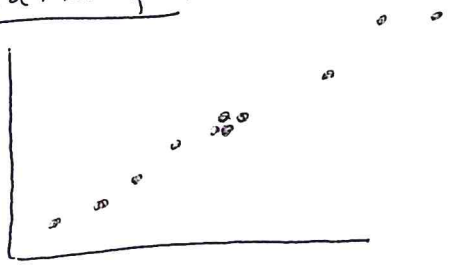
Scatter plot



Eq: $y = 1.54x - 0.22$

a. Estimate the # of Representatives for Texas, if the Population is 20,000,000.

$x = 20 \rightarrow y = 1.54(20) - 0.22 \rightarrow 30.58 \rightarrow$ 31 Reps

b. What would a state's population be if they had 15 Representatives?

$y = 15 \rightarrow 15 = 1.54x - 0.22$ $x = 9.9$ million

2. The CN Tower in Toronto, Ontario, is 1821 feet tall. The data in the table below shows the height of a penny when dropped from the top of the tower after each given amount of time.

Time (sec)	Height (ft)
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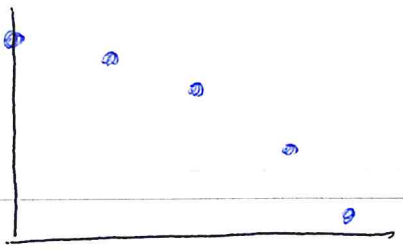
Scatter plot:



Eq: $y = -16x^2 + 1821$

a. Estimate the height of the penny after 7 seconds.

$x = 7$ $y =$ 1037 ft

b. Estimate the height of the penny after 12 seconds.

$x = 12$ $y = -483$ ft