

The following is some information about the height of the world’s tallest man? We can make a scatter plot and draw in the line of best fit (We did this in Unit 4, Day1). Now lets use a calculator.

1. Use your calculator to make a scatter plot of the data.

Unit 4 Day 1 Notes, Line of Best Fit

Robert Pershing Wadlow was the world's tallest man. he lived from 1918-1940. The chart below shows his height at various ages.

Age in Years	Height in Inches
5	64
8	72
9	74.5
10	77
11	79
12	82.5
13	85.75
14	89
15	92
16	94.5
17	96.5
18	99.5
19	101.5
20	102.75
21	104.25
22	105.5
22.4	107.1

1. Make a graph representing the relationship between Robert's age and height.
2. Use a ruler to draw in the line that best models the data.
3. Find the slope and y-intercept of the line of best fit you drew.
 $m = \frac{1}{2}$ $b = 50$
5. Write a function for your line of best fit.
 $R(x) = \frac{1}{2}x + 55$
6. Use your line of best fit to predict Robert's height at age 7.
72 inches
7. If Robert had continued to grow at the same rate and had lived to age 30, what would we expect his height to be?
 $R(x) = \frac{1}{2}x + 55$
 $R(30) = \frac{1}{2}(30) + 55$
 $= 130$

Age in Years	Height in Inches
5	64
8	72
9	74.5
10	77
11	79
12	82.5
13	85.75
14	89
15	92
16	94.5
17	96.5
18	99.5
19	101.5
20	102.75
21	104.25
22	105.5
22.4	107.1



2. On the calculator, make a line, then have the calculator show the residual squares. Move your line until you think you have minimized the residual squares.

3. Have the calculator plot the linear regression line. How does the linear regression compare to your line of best fit?

4. What was the linear regression equation?

5. If Robert had lived to age 30, what height would we expect him to be?

I kept track of how much money was in my savings account over the last 10 years.

6. Use your calculator to make a scatter plot of the data.
7. Try to fit a line to the data. How well can you minimize the residual squares?
8. Would a different type of function better fit the data?
9. Use your calculator to plot an exponential regression. How well does it fit?

Years	\$ Saved
0	5000
1	5500
2	6050
3	6660
4	7320
5	8050
6	8860
7	9740
8	10720
9	11790
10	12970

10. What is the exponential regression equation?

11. Predict how much money I will have after 12 years.

12. Why was an exponential regression better to use for this data than a linear regression?

13. For each graph below, tell which type of regression equation you would use.

