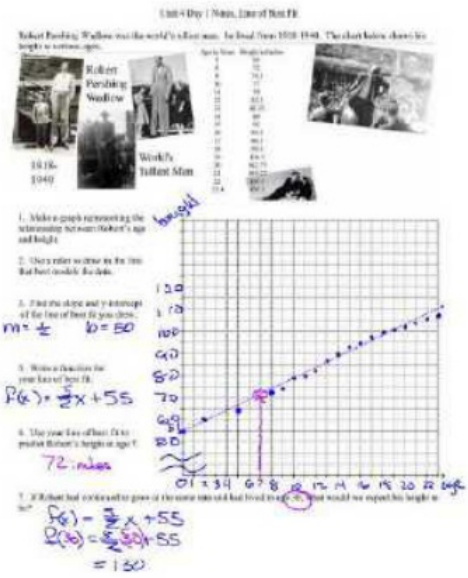
Sec I – Term 4, Statistics Name_____ ID: 1

Notes: T4-70 Regression and Line of Best Fit Date_____Period_____

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.

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? pretty close, y-int. is off.

4. What was the linear regression equation?

by calculator $y = 2.5x + 52$

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

$y = 2.5(30) + 52$

$= 127$ inches (10', 7" tall)

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

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

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?

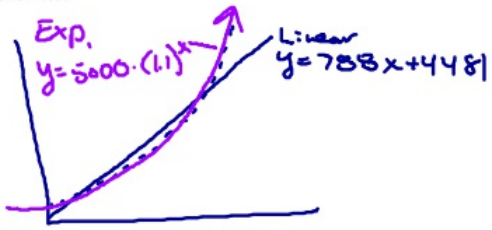
$y = 788x + 4481$

8. Would a different type of function better fit the data?

Exp. Function

9. Use your calculator to plot an exponential regression. How well does it fit?

$y = 5000 \cdot (1.1)^x$ good



10. What is the exponential regression equation?

$y = 5000(1.1)^x$

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

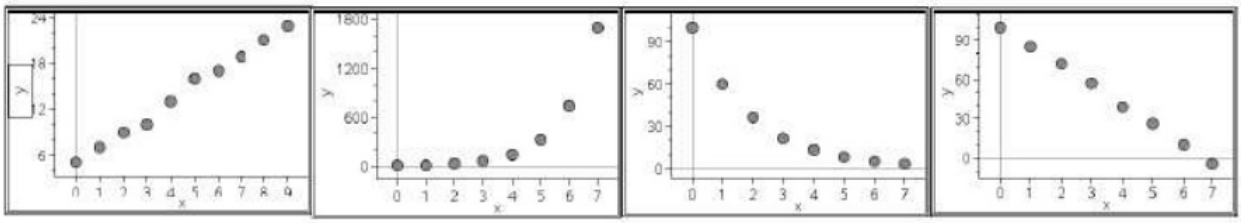
$y = 5000(1.1)^{12}$

$\approx 15,692$

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

follows the data line; r is closer to 1

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



Linear Inc. Exp. Growth Exp. Decay Linear. Dec.