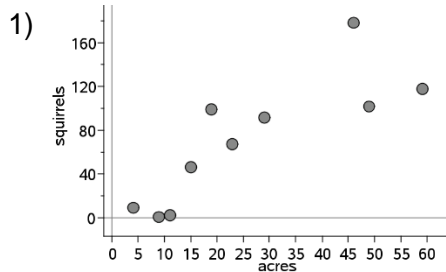
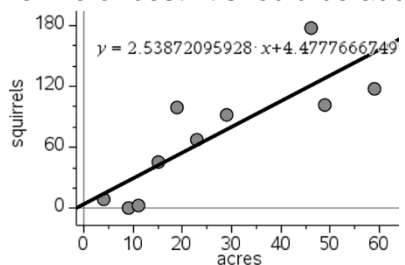


# Integrated Math 2

## Checkpoint 5A Solutions

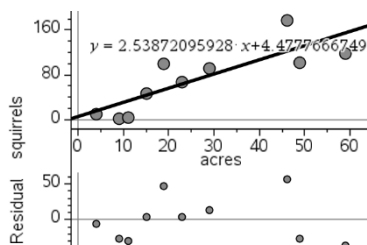


2) The line of best fit should be added to the previously sketched scatter plot.



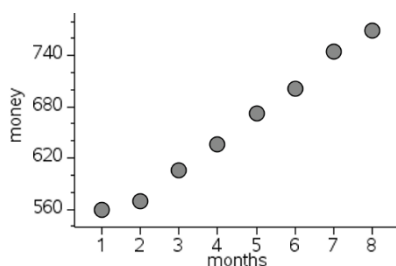
3) It appears to be a good line of fit because there's observed data above and below the line of best fit.

4) The student should create a sketch of the residual plot shown below. It represents a good fit because the points are random and scattered.

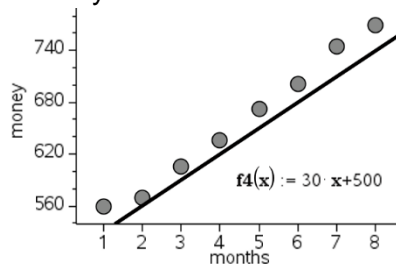


5) The sum of residual squares is 9210.70. This value explains how good of a fit this line is to the data.

6) The scatter plot below should be a rough sketch on the student's paper.

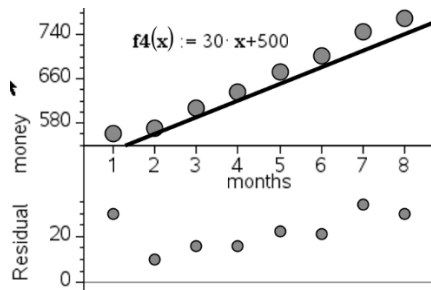


7) This line  $y = 30x + 500$  should be added to the previously sketched scatter plot.

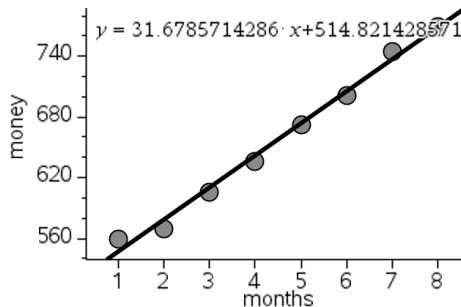


## Explanation

It appears that  $y = 30x + 500$  is NOT the best fit for the data because the line does not go through the points; that is to say, almost all observed data is above the line.



- 8) See residual plot above. The residual plot shows that all data points are above the zero line (horizontal axis), and this indicates that the line  $y = 30x + 500$  is not a good estimation of data.
- 9) The line of best fit is rounded to be:  $y = 31.68x + 514.82$



- 10) The sum of residuals squared is rounded to 369.54. Because it's a smaller value than the sum of residuals squared in question #5 (which was 9210.70.), this linear regression is a much better fit for its data compared to the first set of data.
- 11) See below. Must show work. Sketch the residual plots for the linear, quadratic, and exponential.
- Quadratic
  - Exponential