

## Math 203 Project Part 2

### Driving Question: How can we improve College of Alameda?

1. Define variables (what do  $x$  and  $y$  stand for?)
2. You will use Excel and create a scatter plot. Cut and paste to have 3 of these plots. Right click the line to add regression, displaying the equation in chart and forecasting forward and backward by 5 years. Use linear, exponential and quadratic regression.

Complete the following math analysis:

For linear regression:

- i. Interpret slope and  $y$ -intercept.
- ii. Find and interpret  $x$ -intercept.

For quadratic regression (polynomial order 2):

- i. Interpret vertex and  $y$ -intercept.
- ii. Find and interpret  $x$ -intercepts.

- a. Define variables
  - b. In each case, extrapolate 2 and 4 years into the future (2017, 2019). I recommend that you use years starting from 2000 or 1990.
3. Transfer the above graphs and math work done to Microsoft word and your chosen site for presentation.

Example:

Define Variables:

$x$ : years since 2000

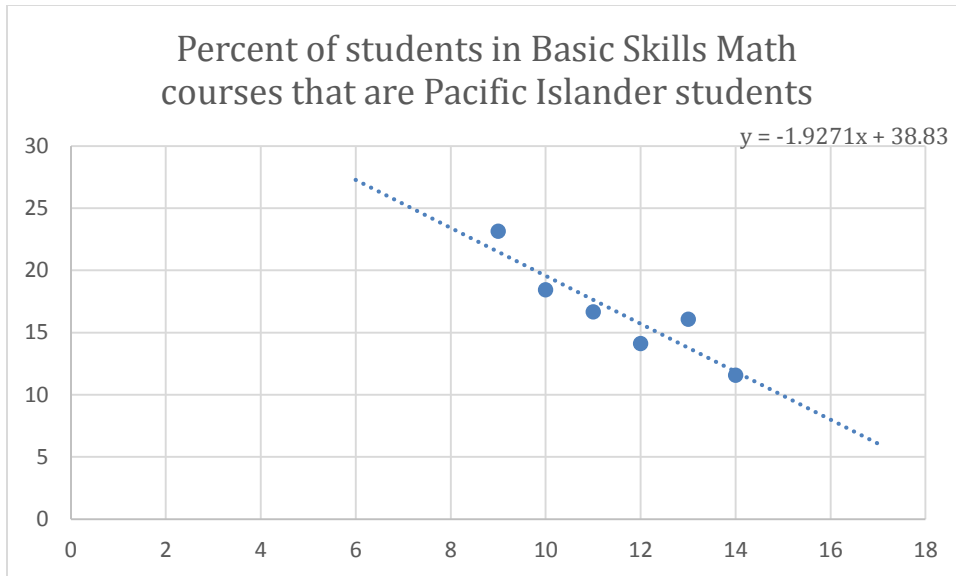
$y$ :

Years since 2000	Percent of students in Basic Skills Math courses that are Pacific Islander students
9	23.14
10	18.43
11	16.67
12	14.12
13	16.08
14	11.57

Linear regression

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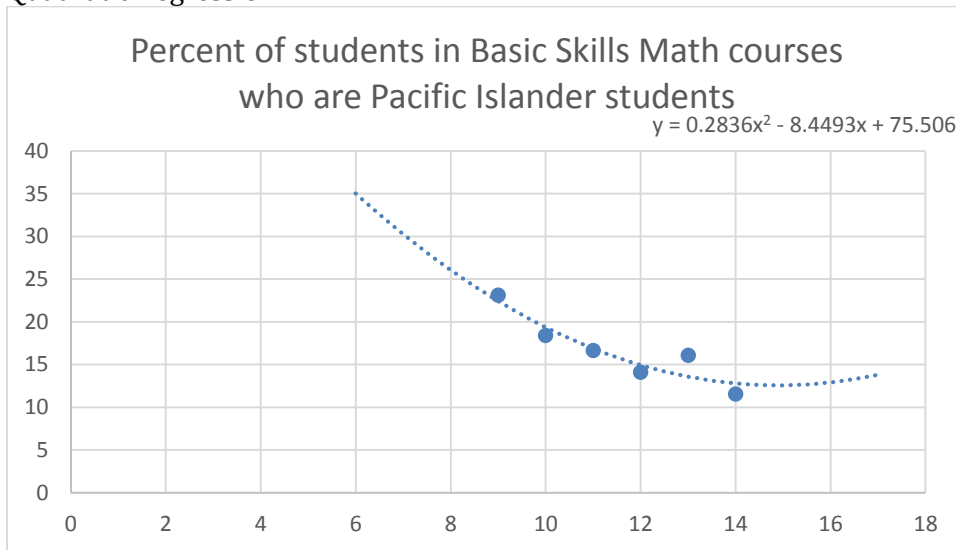
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Slope:  $m = -1.9271$ . Interpretation: this means that the percent of Basic Skills Math courses taken by Pacific Islander students decreases at 1.9271 percent per year.

Y-intercept:  $(0, 38.83)$ . Interpretation: this means in the year 2000, 38.83% of students in Basic Skills Math courses were Pacific Islander students.

### Quadratic Regression



Vertex:  $(14.90, 12.57)$ . Interpretation: the percent of students in basic skills Math courses who are Pacific Islander students hit a minimum in the year 2014 when 12.57% of the students were Pacific Islander.

y-intercept:  $(0, 75.506)$ . Interpretation: in 2000, 75.506% of the students taking basic skills math courses were Pacific Islander students.

x-intercept: None. Interpretation: there will never be a time when 0% of students taking basic skills math courses are Pacific Islander.