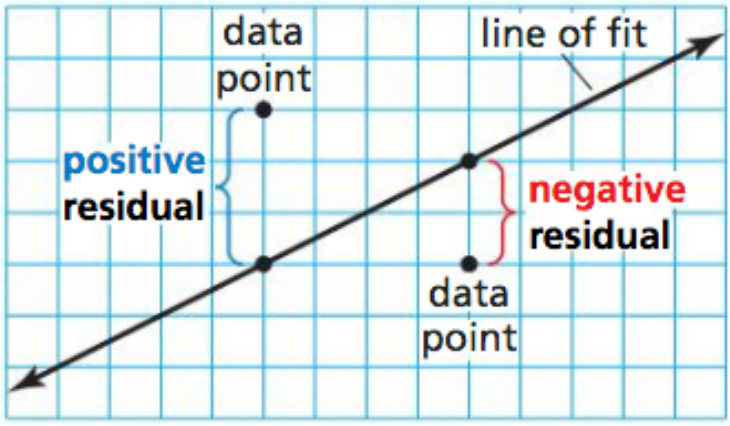
4.5 Analyzing Lines of Fit

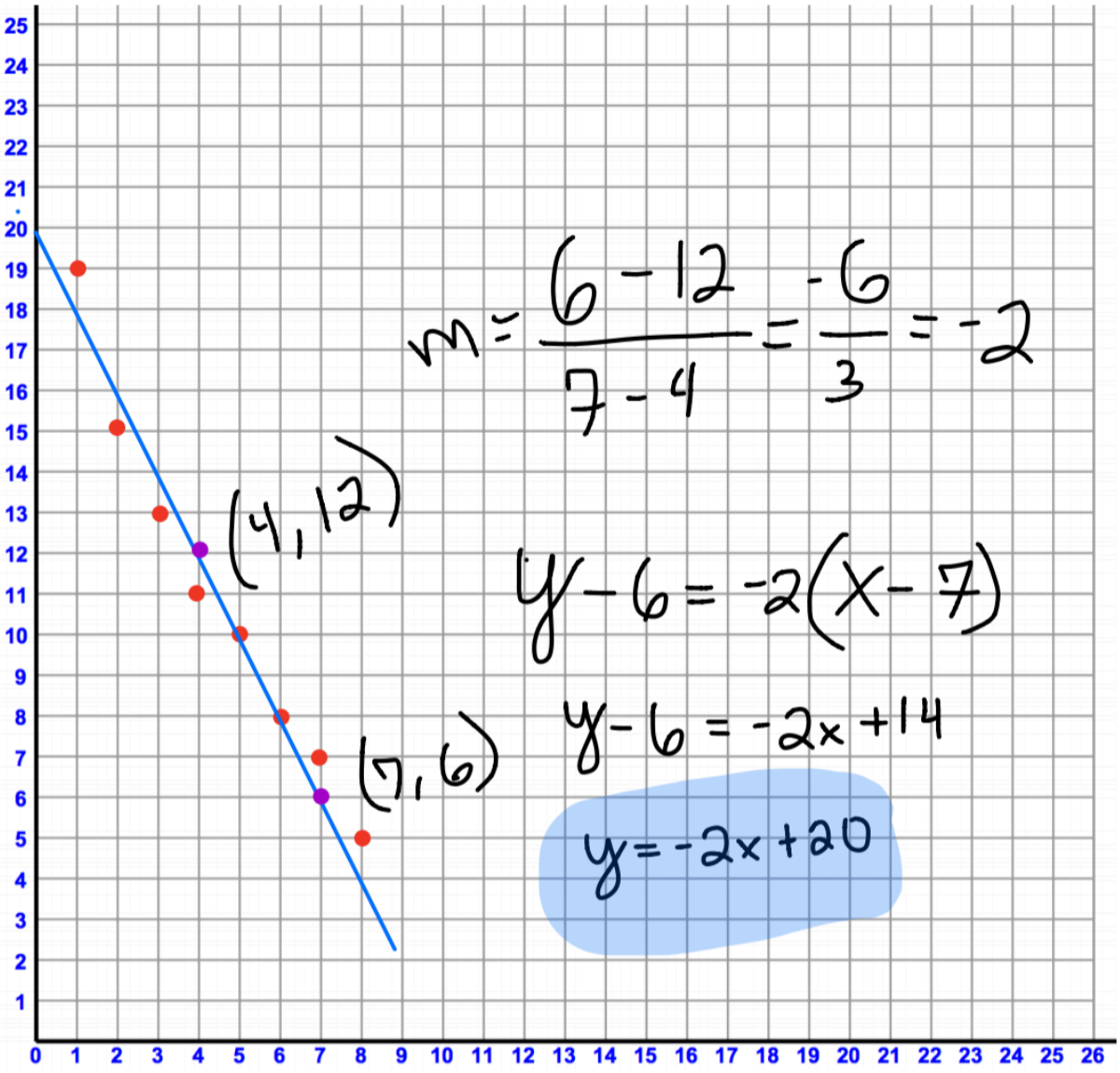
What is a residual?

A ***residual*** is the difference of the y-value of a data point and the corresponding y-value found using the line of fit.



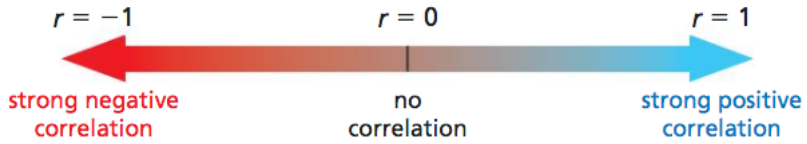
Example 2: from 4.4 (Period 2)

Analyze the residuals:



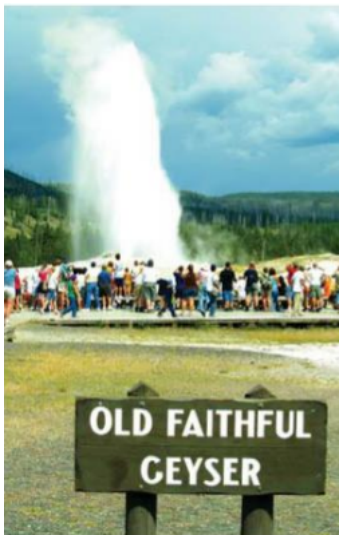
Linear Regression:

Graphing calculators use a method called linear regression to find a precise line of fit called the line of ***BEST FIT***



Example 3: Lines of **BEST** fit

Finding a line of BEST FIT using a calculator.



The table shows the durations x (in minutes) of several eruptions of the geyser Old Faithful and the times y (in minutes) until the next eruption. (a) Use a graphing calculator to find an equation of the line of best fit. Then plot the data and graph the equation in the same viewing window. (b) Identify and interpret the correlation coefficient. (c) Interpret the slope and y-intercept of the line of best fit.

Duration, *x*	2.0	3.7	4.2	1.9	3.1	2.5	4.4	3.9
Time, *y*	60	83	84	58	72	62	85	85

Example 4: Interoperating and extrapolating data.

Refer to example 3:

A) Approximate the duration before a time of 77minutes

B) Predict the time after an eruption lasting 5minutes.

Classwork / Homework
5, 6, 11, 12, 17.

Complete Self Data Sheet.

Name: _____ Period: _____

Partner 1: _____ Partner 2: _____

Use a ruler to get the most accurate measurements possible. Round to the nearest ¼ inch.

1) Height (inches) _____
2) Arm span (inches, finger tip to finger tip) _____
3) Foot size (inches, heel to longest toe) _____
4) Hand size (inches, palm to longest finger) _____
5) Leg length (inches, hipbone to floor) _____
6) Pointer Finger (inches, knuckle to tip) _____