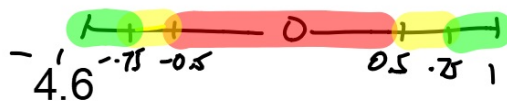


Algebra 1



Write equations of best-fit lines using linear regression
(graphing calculators)

$$a = 3.15$$

$$b = -2.6$$

$$r = 0.17$$

best-fit line

linear regression equation

median-fit line (use linear regression instead)

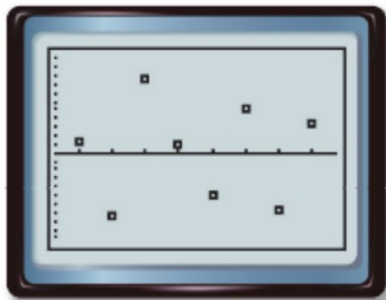
correlation coefficient (r)

$$y = 3.15x - 2.6$$

Disregard residual

 Real-World Example 2 Graph and Analyze a Residual Plot

HOCKEY Graph and analyze the residual plot for the data for Guided Practice 1A. Determine if the best-fit line models the data well.



$[0, 8]$ scl: 1 by $[-10, 10]$ scl: 2

We need an equation before we can answer the question!



Real-World Example 3 Use Interpolation and Extrapolation

PAINTBALL The table shows the points received by the top ten paintball teams at a tournament. Estimate how many points the 20th-ranked team received.

x L₁
y L₂

Rank	1	2	3	4	5	6	7	8	9	10
Score	100	89	96	99	97	98	78	70	64	80

approx 40 pts

$$L_2 \left| \begin{array}{l} \therefore y = -3.272x + 105.2 \\ \therefore r = -0.762 \\ \therefore \text{good} \end{array} \right.$$

L₁ Rank

$$\text{Score} = -3.272(\text{rank}) + 105.2$$

$$\begin{aligned} \text{Score} &= -3.272(20) + 105.2 \\ &= 39.76 \end{aligned}$$

4, 6 p. 259

5, 7, 9, 14, 25-34

Linear regression (line of fit) instead



Example 4 Median-Fit Line

PAINTBALL Find and graph the equation of a ~~median-fit line~~ for the data in Example 3. Then predict the score of the 15th ranked team.

