Algebra 1 4.6

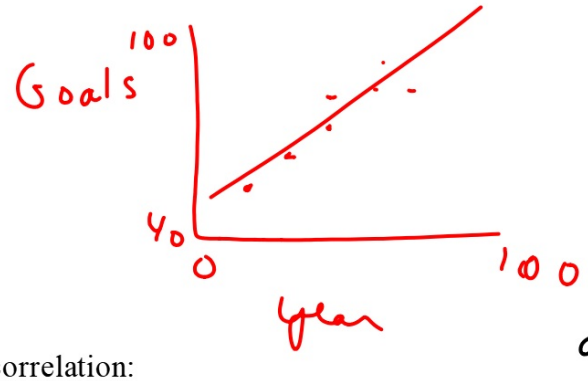
Write equations of best-fit lines using linear regression
technology: VTI (graphing calculator app)

Instructions are technical but not difficult:
take good notes, also see p. 255
will post class notes online in the usual place

best-fit line
linear regression equation ← app
~~median-fit line~~
correlation coefficient (r) ← app

1B. HOCKEY The table gives the number of goals scored by the team each season.

		0	1	2	3	4	5	6	7
L_1	Year x	2003	2004	2005	2006	2007	2008	2009	2010
L_2	Goals y	63	44	55	63	81	85	93	84



$y = 5.9524x + 50.1667$

$r = 0.8495$ good pos corr.

correlation:

goals = 5.9524(year) + 50.1667

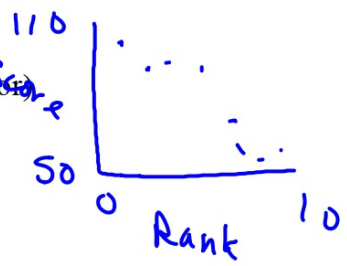
≈ 39 points

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.

L_1	Rank x	1	2	3	4	5	6	7	8	9	10
L_2	Score y	100	89	96	99	97	98	78	70	64	80

Write the equation (calculator)
Answer the question



Score = −3.3152 Rank + 105.3333
r = −0.7607
strong neg.

Disregard median-fit, use linreg

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.

Another type of calculation, gives almost same answer as linear regression.
Disregard median-fit instructions and do linear regression instead.