

Algebra 1 4.6

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

Instructions are technical but not difficult:

take good notes, also see p. 255

will post class notes online in the usual place

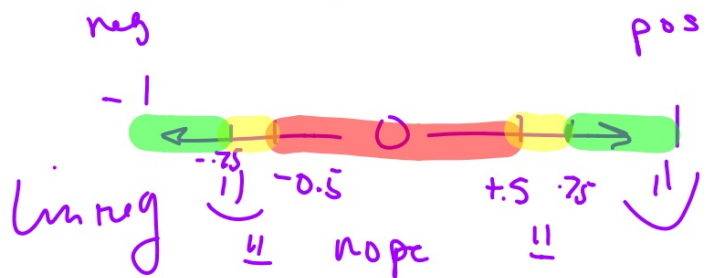
Also handout

best-fit line

linear regression equation

~~median-fit line~~

correlation coefficient (r)



Graphing calculator startup: (write this down)

1. Power on
2. Clear screen
3. y= clear (enter)
4. 2nd y= Statplots off (enter)
5. Stat...edit...clear lists

Take good notes, nobody will be tutoring you during test, quiz.
The only way to get r is by graphing calc

To enter data and graph:

Enter data (stat...edit)

Set window (window)

Set up stat plot (2nd y=)

ON

scatterplot

L1

L2

Mark

Graph

To calculate equation and correlation:

Regression equation

(stat...calc...linreg)

Write down a, b, r

Enter equation ($y=ax+b$)

Explain meaning of r

Group (years since 2003)

$$y = 5.952x + 50.167$$

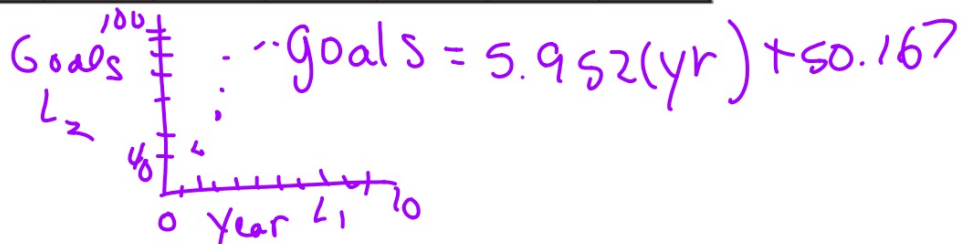
$$r = 0.850$$

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

L_1

L_2

Year x	2003	2004	2005	2006	2007	2008	2009	2010
Goals y	63	44	55	63	81	85	93	84



correlation:

Partners

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.~~

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

Write the equation (calculator)

Answer the question

L_2
Score
 L_1
Rank

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.