Alg2Trig Warm Up Chap 2 Day 3

*DLT

*You need calculators today!!!

Bonus

The volume of a sphere is given by the formula $V = \frac{4}{3}\pi r^3$ and its surface area by $S = 4\pi r^2$, where r is the radius of the sphere. What is the volume of a sphere, in cubic centimeters, if its surface area is 144π square centimeters?

A. 24π
B. 32π
C. 72π
D. 256π
E. 288π

Homework: Even Answers

pg 86
24.) $6/hour
44.) 1/16, total 3/16

pg 94
60.) m= cost per night for camping
y-int= initial membership

68.)a.) parallel to each other
b.) x-int: no more words left to type
y-int: # of words each person has to type
slope: words per minute
c.) your friend
takes you 28 min and your friend 24 min

Algebra 2 Trig Daily Learning Target Quiz
Graphing-Writing Equations-Slope

1.)Write an equation of the line given the following info. a.) passes through (0, 7) and has a slope of -2/3. b.) passes through (-1, 4) and has a slope of 2.	2.) Write an equation of the line in **standard form** given the following info. passes through (2, 3) and (1, 4)
3.) Sketch a graph of $y=(-2/3)x + 4$	4.) Over a 30 day period, the amount of propane in a tank decreases from 400 gallons to 214 gallons. What is the average rate of change in the amount of propane?

ACT DLT EXTRA CREDIT

To check the slope of a ramp, a building inspector places an overlay of the standard (x,y) coordinate plane on the construction blueprint so that the x-axis aligns with the horizontal on the blueprint. The line segment representing the side view of the ramp goes through the points (1, -3) and (14, 2). What is the slope of the planned ramp?

A. $-\frac{1}{15}$

B. $-\frac{1}{13}$

C. $-\frac{1}{6}$

D. $\frac{5}{13}$

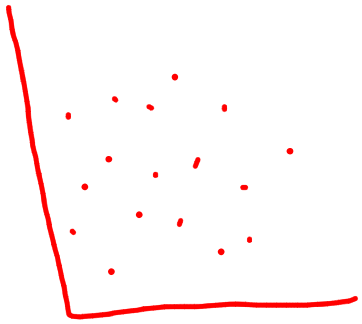
E. $\frac{13}{5}$

Chapter 2
Linear Functions
(2.6)Correlation Line of Best Fit

Scatter Plots

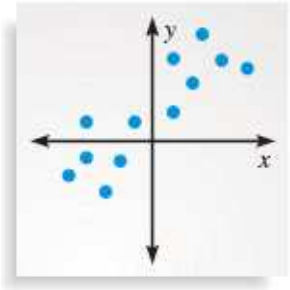
Scatter plots are used to determine if there is a relationship between paired data.

Scatter plot- a graph of a set of data pairs (x, y)



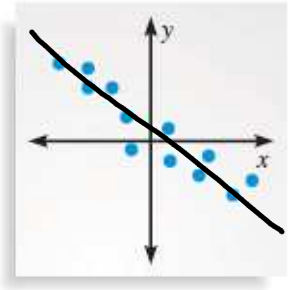
I. Correlation

$r = 1$



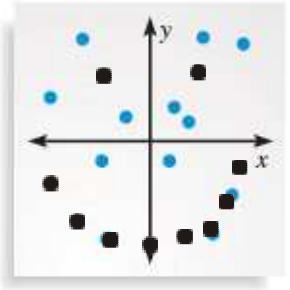
Positive correlation

$r = -1$



Negative correlation

$r = 0$



Relatively no correlation

ITS ALL ABOUT PREDICTIONS...HOW CONFIDENT ARE YOU IN FORECASTING WHAT HAPPENS NEXT...

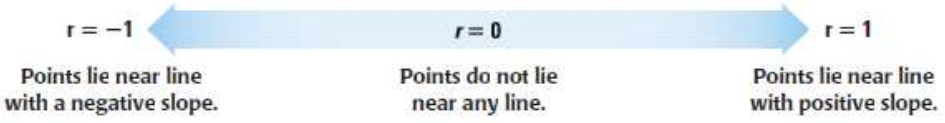
I. Correlation

-1 0 1

r

strong negative correlation

strong positive correlation



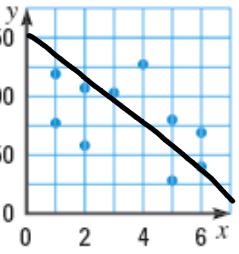
Calculator??

1.)

Examples

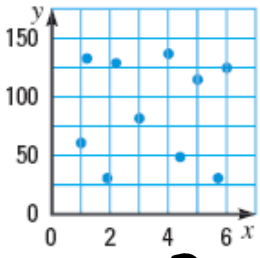
Tell whether the correlation coefficient for the data is closest to −1, −0.5, 0, 0.5, or 1.

a.



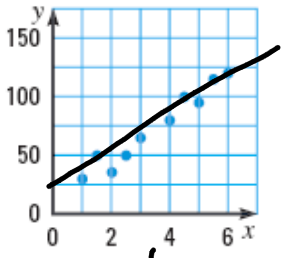
−.5

b.



0

c.



1

When data shows a positive or negative correlation, a line can be used to approximate the data.

This is called the line of best fit.

Equation

They are used to interpolate and extrapolate data...

ITS ALL ABOUT PREDICTIONS...HOW CONFIDENT ARE YOU IN FORECASTING WHAT HAPPENS NEXT...

II. Best Fitting Line

-the line that lies as close as possible to all the data points.

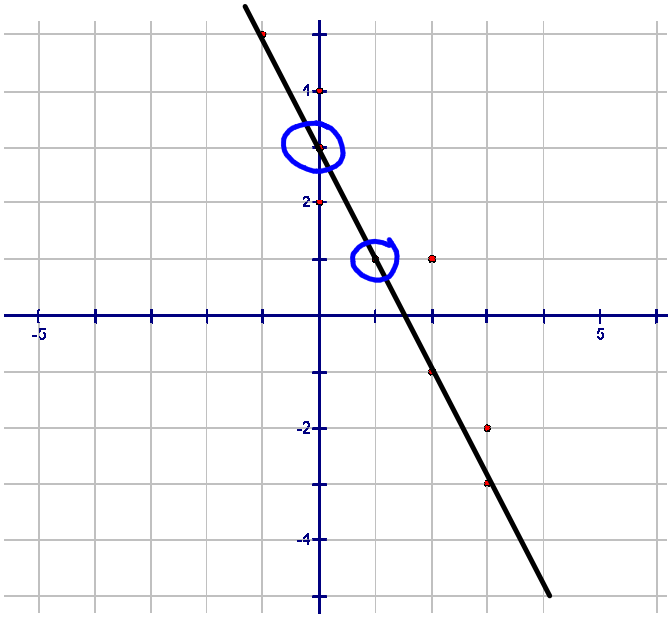
Step 1-> draw a scatter plot

Step 2-> sketch a line(same # of points above and below the line)

Step 3-> choose two points on the line

Step 4-> find the slope and write an equation on the line

3.) Draw a line of best fit.



Examples

Now find the line....

$m = -\frac{2}{1}$ $(0, 3)$

$y - 3 = -2(x - 0)$

$y - 3 = -2x + 3$

$+3$

$y = -2x + 3$

III. Graphing Calculator

Examples

4.) A CD company wants to know if there is a correlation b/w the # of crimes an artist commits and their sales. Enter the data in the graphing calculator to determine the line of best fit and correlation!

Crimes	0	1	2	3	4	5	6	7
Sales in Millions of CDs	.7	.8	1.1	1.4	1.5	1.6	1.9	2

Examples

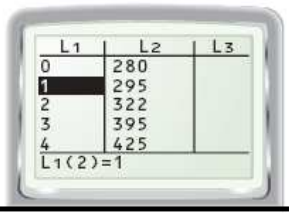
2.) Determine if there's a correlation between interest rates and the current Dow average.

	.045	.05	.055	.06	.065	.07	.075
Interest Rates	4.5%	5%	5.5%	6%	6.5%	7%	7.5%
Points in Thousands	14	13.7	13.2	12.4	12.3	12	11.5

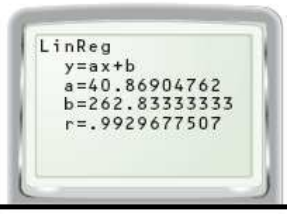
III. Graphing Calculator

TI- 84 Instructions

STEP 1 **Enter** the data into two *lists*. Press **STAT** and then select Edit.



Step 2 **Find** an equation of the best-fitting (linear regression) line. Press **STAT**, choose the CALC menu, and select LinReg(ax+b). The equation can be rounded to $y = 40.9x + 263$.



How to get r - correlation coefficient
-> 2nd 0 - Catalog - Diagnostics ON

Inspire Instructions

1. Home, Lists and Spreadsheet
2. Enter a Name in the top cell and data below
3. Open a Calculator page
4. Menu - Stat - Stat Calculate - Linear Reg: Enter your info
5. Open a Graph page
6. Menu - Graph Type - Scatterplot
7. Enter the names of your data as x and y
8. Menu - Zoom - Data

And the homework:
Unit Plan Day 3

-> Summer Homework next class and pictures!