It is stated that 70% of people like crabs and we take a random sample of 90 people what is the probability over 75% of the sample says they like crabs? . np 210 - Random Sample ~ n(1-P) > 10 . 100 < Pop. Size V  $Z = \frac{\hat{p} - p}{-p}$   $\rightarrow P = .70^{\circ}$ P(1-P) = (-7(.3))

1) Lie detectors are based on measuring changes in the nervous system. The assumption is that lying will be reflected in physiological changes that are not under the voluntary control of the individual. When a person is telling the truth, the galvanic skin response scores have a distribution that is normal with a mean of 51.6 and a standard deviation of 9. (Assume ALL Conditions are met)

M=51.6 0=9 n=10 x=49.5

What is the probability that a sample of 10 people will have an average score less than 49.5? (6 pts)

$$\mu_{\bar{x}} = \mu$$
 $5\bar{x} = \frac{9}{\sqrt{10}} \approx 2.85$ 
 $5\bar{x} = \frac{9}{\sqrt{10}} \approx 2.85$ 
 $7 = \frac{1}{\sqrt{10}} \approx 2.85$ 

Symbols		
Population		Sample
H	Mean	ヌ
5	S.D	5
P	propertion	P
~		

\*

### Symbols for a Sampling Distribution

H= =

6x = 5

Sample

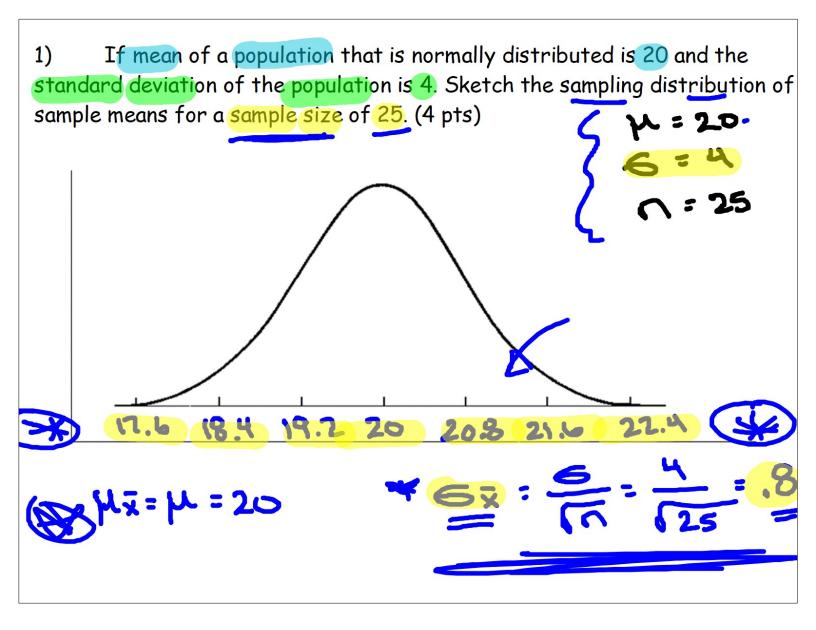
Quartitative

H\$ = P

(1-P)

(3)

Sample Proportions Categorical An SRS of 240 first-year college students were asked whether they applied for admission to any other college. In fact, it is known that 76% of all first-year students applied to colleges besides the one they are attending. What is the probability that the poll will give a sample proportion



#### Scatter Plots and Least-Squares Lines

#### You should be able to:

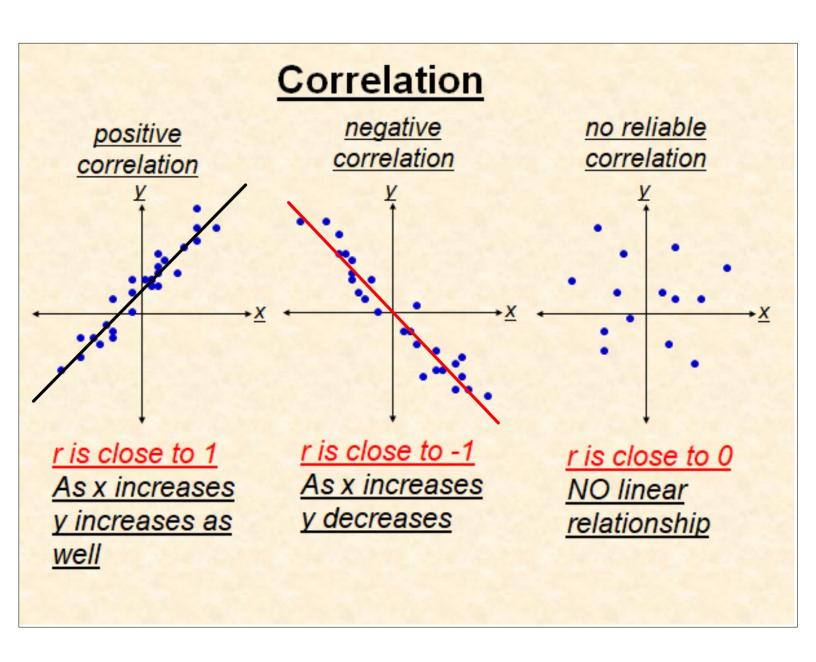
- Create a Scatter Plot on STAT CRUNCH
- 2. Find the equation for the Linear Regression Line
- 3. Understand the strengths of linear correlations
- Find and understand the meaning of the coefficient of correlation "r-value"
- Make a prediction for an output value (y-hat) given a specific x-value.

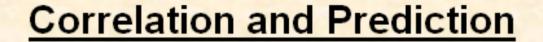
# **Vocabulary**

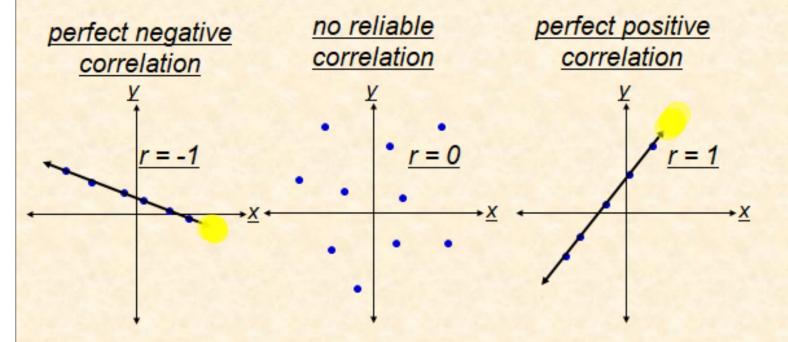
- Scatterplot: Is a graph showing two sets of quantitative data on a coordinate plane.
- Explanatory Variable (x): is the variable that is trying to explain changes in y.
- Response Variable (y): is the value obtained at a specific x-value.

# Correlation

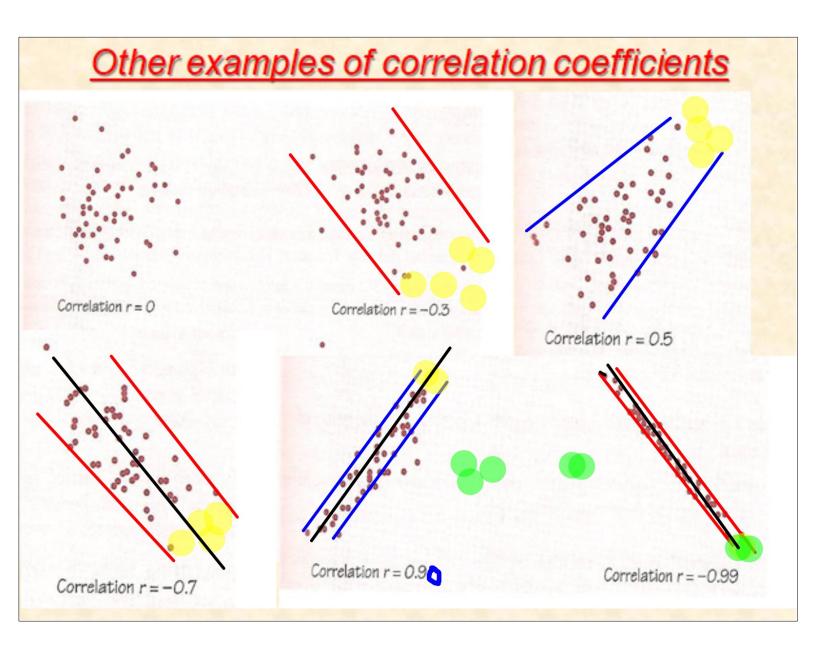
- The main result of a correlation is called the correlation coefficient (or "r"). It ranges from -1.0 to +1.0. The closer r is to +1 or -1, the more closely the two variables are related.
- If <u>r is close to 0</u>, it means there is <u>no linear</u> relationship between the variables.
- If r is positive, it means that as one variable gets larger the other gets larger.
- If r is negative it means that as one gets larger, the other gets smaller



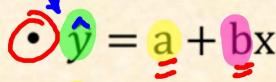




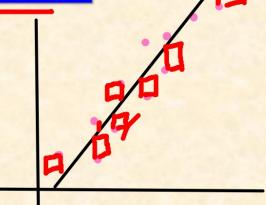
If r is equal to 1 or -1 then every data point would be on the same line.







- a = y intercept
- b = slope
- ŷ = predicted y-value
- This equation will be found by using Stat Crunch



#### Least-Squares Regression Line (LSRL) (line that best fits the data) の様 E Appe (a) Name (a) Separate San Sept. 2013 SAT Results by District.xlv MulCromiti Apprinte Edit Sists (Mat Grapit Holy) NAA AMA NASS NASS NASS NASS Debit Fedtwers leveling limity Achraems (1)/2-13,723/9/ 58 44.7 Attivition Car ènt 1111:-17.3093094 (A to f) - another ACTIVATA PARK CIM-HIAMHER 401 Maches Eposel -014 MAG 431 1341 - 7 (0) 354 (4) Nimple lidear regression results; Builliams Clini 134 411 031 407 1287 44 995811 stantis Cook 1341 (2.439819 Endopendent Yarlatis: Text Name 25.65649 572 Add 1286 Marryw Cook Compositions in 1347, 1504 o 5.832355866 TaxCasero 1640 61325514 Martine Chief 297 411 A provoleton coefficient) = 0.20000104 H-by = 0.000301623 6M HIT COL 434 443 1302 -47,52388 4238 Also VALL SEX DESCRIPT Bennion Class 44 444 427 Established of ever standard declaration, 93,721445. MADE COUNTY 943 421 624 \$256 JOB 2020ER Blackey CK 74 and 1609 472 1479 129 30104 Furgrisher automakes: BIRCENY CO. XXX) 98.51E04 Afternative DF 1 that P value Parameter Entireater SHE ENT 474 461 1413-351,79894 Brameix City 7.1499079 1347,1500 # 8: 276: 178.81209: 40.000

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