

# STA 130 Tutorial 8

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# Agenda

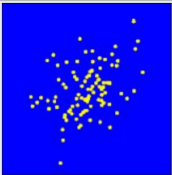
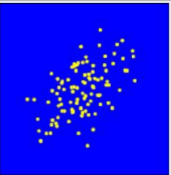
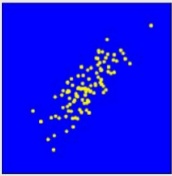
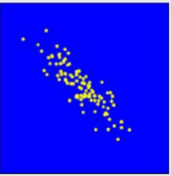
## 1 Vocabulary for the Week

- Correlation
- Linear Regression Equation
- Anscombe's Quartet
- Kahoot

## 2 Presentations (in Project Groups)

# Correlation

- The **correlation** summarizes the strength and direction of a linear relationship between two numerical variables.
- **Sign** of correlation gives direction
- **Magnitude** of correlation gives strength

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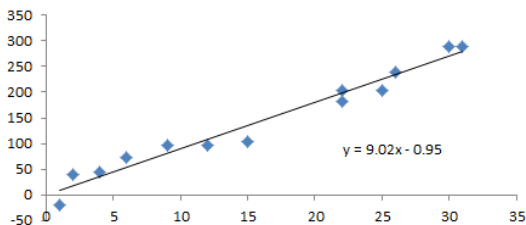
Match the correlations with the scatter plots.

[Check answers](#)

# Linear Regression Equation

$$Y_i = \beta_0 + \beta_1 x_i + \epsilon_i$$

- $Y_i$  - response variable (or dependent variable, or target variable) for observation  $i$
- $x_i$  - independent variable for observation  $i$
- $\beta_0$  - intercept parameter
- $\beta_1$  - slope parameter
- $\epsilon_i$  - random error for observation  $i$



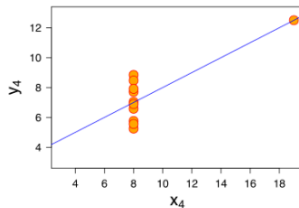
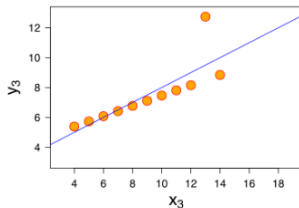
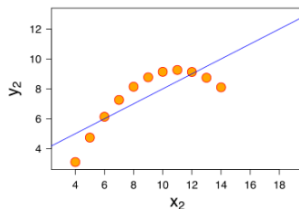
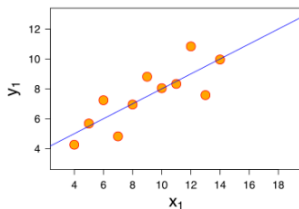
# Derivation of $\beta_0$ on Chalkboard

See this week's lecture slides

# Anscombe's Quartet

$$Y_i = \beta_0 + \beta_1 x_i + \epsilon_i$$

$$y = 3.0 + 0.50x$$





# Presentations (in Project Groups)

Uploaded to Quercus under *Tutorial 8 Activity.docx*. I will assign which groups present what.





# Presentations