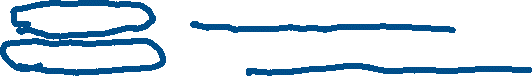
**Scenario 1**

A company is hoping to collect data about the different marketing strategies they have undertake via social media. They want to measure the number of people who follow their posts on Facebook, Twitter, and LinkedIn to determine if one site works better than the others.

Dependent Variable is the number of people who follow their posts



Independent Variable comes with three levels: Facebook, Twitter, and LinkedIn

* Categorical
* Either a t-test or ANOVA
* T-test only allows two levels, but here we have three, so the best option is the **1-way ANOVA**

Text

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**Scenario 2**

You have been hired to predict how roofing companies will fare in the upcoming years. There are several predictors: yearly hurricanes, winter storms, shingle prices, and GDP.

Predict is the keyword for **linear regression**

Dependent variable is continuous or how the roofing companies will fare in the upcoming years



Independent variables are all continuous and include yearly hurricanes, winter storms, shingle prices, and GDP



Text

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**Scenario 3**

A hospital has contracted with you to determine how to improve patient care, as measured continuously by both pain level and disability level. They are examining these metrics upon admission to the hospital and at discharge from the hospital, and they are comparing their current standard of care to one where they check on the patients every hour.



Measured continuously are keywords for the **repeated measures MANOVA**

Related continuous Dependent variables are pain level and disability level

Change over time component is found in metrics upon admission to the hospital and discharge from the hospital – so “within” will be used in the repeated measures MANOVA

“Between”-subjects design is found in the groups being compared: their current standard of care vs where they check on the patients every hour.

**F tests -** MANOVA: Repeated measures, within-between interaction

**Options:** Pillai V, O'Brien-Shieh Algorithm

**Analysis:** A priori: Compute required sample size

**Input:** Effect size f(V) = 0.25

α err prob = 0.05

Power (1-β err prob) = 0.8

Number of groups = 2

Number of measurements = 2

**Output:** Noncentrality parameter λ = 8.0000000

Critical F = 3.9163246

Numerator df = 1.0000000

Denominator df = 126

Total sample size = 128

Actual power = 0.8014596

Pillai V = 0.0588235