# Null and Research Hypotheses: Identify 1-3 below with a Correct Decision, type 1, or type 2 errors

Ho: No difference between Group 1 and Group 2

Ha: There is a difference between groups

1. Deciding there is a statistically significant difference between groups, when, in fact, there is a difference

2. Deciding there is a statistically significant difference between groups when, in fact, there is not a difference

3. Deciding there is not a statistically significant difference when, in fact, there is a difference

# What part of curve to use? ‘Big part,’ ‘small part’ (i.e., z and beyond), or ‘mean to z’

Use mean=100. If asked to find the probability of getting a score of:

4. 101 or below

1. 110 or above
2. Between 90 and 100 (i.e., the mean)

# Using Empirical Rule

1. If 200 students are taking a quiz, approximately how many will fall within ± one standard deviation of the mean? Within two? (**hint: first find the area then multiply by 200 to get “X” # of students. Round answer to nearest whole number**)

# Problem Solving Z Scores (no need to convert raw score into z-score, just start plotting on your normal curves and then find area using normal distribution tables (i..e, yellow sheet)!!)

## What percentage falls beyond a z score of .66?

## What percentage falls between a z score of -.25 and .66?

# Problem Solving Using Raw Scores

## The average crime rate in San Jose is 7.5 with stand deviation of .5. What is probability of San Jose having 7.9 crimes or more?

## The average crime rate in San Jose is 7.5 with stand deviation of .5. What is the probability of San Jose having between 7.9 and 8.5 crimes?

1. What raw score would a student need to place in the top 8 percent of all students given a mean of 80 and a standard deviation of 8?

# Confidence Intervals

## Crime rate mean in San Jose-Santa Clara–Sunnyvale metropolitan area is 7.5 with a standard deviation of 1.2, 50 neighborhood blocks were sampled. Find 95% Confidence Interval of true average of crime rate in San Jose? Interpret your findings.

# Confidence Interval For Proportion

## 60 percent of a sample of 50 rock fans like RUSH, draw a 95 CI around the true proportion who likes RUSH