Mrs. Daniel- AP Stats
More on Type 1 & 2 Errors and Power

1. Power is probability of correctly catching the “bad” when it is actually happening. Example: The police writing someone a ticket for speeding when the person was actually speeding.
2. Power is preventing a Type 2 error. Type 2 errors can only happen when $H_a$ is actually true. Type 2 = Double $F$. Fail to reject when false.
3. We increase Power with:
   a. bigger sample size
   b. more severe cheating (it’s easier to catch someone going 70mph in a 35mph speed zone than catch someone speeding that is going 70mph in a 65mph speed zone; both are speeding, but the 70mph in the 35mph zone is more noticeable).
   c. Change the Significance level (easier to prove/catch cheating at alpha = 0.10 than at alpha = 0.05.)
4. Type 1 error = false positive. Think $H_a$ is true, but $H_a$ is not true. Think someone is HIV positive and they do not have HIV.