**Hypothesis Testing**

**Newton, Massachusetts is an affluent suburban school system. A school administrator from Newton plans to select a sample of size N=1 to evaluate whether the population average of 3rd grade scores is different than the broader population mean of 600 and standard deviation of 100. He chooses to do a two-tailed, nondirectional test.**

 a) What is his null hypothesis?

Ho: $µ=600$

 b) What is his alternative/research hypothesis?

H1: $µ$**≠**$ 600$

c) How would the null hypothesis and alternative hypothesis change if he conducted a one-tailed test instead?

Ho: $µ\geq 600$ Ho: $µ\leq 600$

OR

H1: $µ<600$ H1: $µ>600$

d) The researcher draws a random sample of N=1 and finds X=790. What is the z-value for this sample result?

$z= \frac{X- μ}{σ}$

$z= \frac{790- 600}{100}$ = +1.9

 e) Determine the rejection region, and decide whether to reject or retain the null hypothesis.

z-crit = +1.96

z-crit > +1.9

Conclusion: Retain the Null