**STAT 477/577 – Class Activities**

**Module 1 – Section 3**

**Sampling Distribution for the Sample Proportion**

Suppose 30% of adults in the United States believe there should be a wall along the border with Mexico. Describe the sampling distribution of 𝑝̂ from a random sample of 1,000 adults in the United States

The probability of success p is 0.3. μ𝑝̂ = 0.3. σ𝑝̂ = sqrt(0.3\*0.7/1000) = 0.016

The sampling distribution will be approximately normal.

Using your answer above, what is the probability of obtaining the following outcomes from the random sample of 1,000 adults:

* More than 33% believe there should be a wall along the border with Mexico

z = (0.33 – 0.3)/0.016 = 0.03/0.016 = 1.875

p = 0.4696

* Less than 28% believe there should be a wall along the border with Mexico

z = (0.28 – 0.3)/0.016 = -0.02/0.016 = -1.25

p = 0.3943