

$$\sqrt{\frac{p(1-p)}{n}}$$

$$\sqrt{\frac{0.30(1-0.30)}{100}} = \sqrt{\frac{0.30(0.7)}{100}} = 0.0458$$

$$\mu\hat{p} = p = 0.30$$

### ❖ Confidence Interval: -

Confidence Interval: 95%

$$CI = \hat{p} \pm z \times \sqrt{\frac{\hat{p}(1-\hat{p})}{n}}$$

$$95\% CI = 0.32 \pm 1.96 \times \sqrt{\frac{0.32(0.68)}{100}} = 0.32 \pm 0.0914$$

$$\text{Lower bound} = 0.32 - 0.0914 = 0.2286$$

$$\text{Upper bound} = 0.32 + 0.0914 = 0.4114$$

$$95\% CI = (0.2286, 0.4114)$$

I am 95% confidence that the percent of CCD students that have work study is between 22.86% and 41.14%.

### ❖ Hypothesis Test: -

$$\alpha = \frac{.05}{2} = .025$$

$$H_0: p = 0.30$$

$$H_a: p \neq 0.30$$

Calculate Z data