

## Answer on Question #79688 – Math – Statistics and Probability

### Question

A consumer group claims that more than 62% of people choose coffee rather than other beverages as their preferred drink in the morning. In the sample of 92 people, 68 reported that they prefer coffee. At  $\alpha = 0.03$ , is there enough evidence to support the consumer group's claim?

### Solution

Null hypothesis  $H_0: p = 0.62$ .

Alternative hypothesis  $H_a: p > 0.62$ .

$$\text{Test statistic: } z = \frac{p - \hat{p}}{\sqrt{\frac{p(1-p)}{n}}} = \frac{\frac{68}{92} - 0.62}{\sqrt{\frac{0.62(1-0.62)}{92}}} = 2.354.$$

P-value (from the table):  $p = 0.009$ .

Since the P-value is less than 0.03 the null hypothesis should be rejected.

There is enough evidence to support the consumer group's claim.