**Problem Question#6653**. 1. An LU professor is interested in whether there is a difference between undergraduate students and graduate students in the amount of time spent praying each day. The professor gathers information from random samples of undergraduate and graduate students on the LU campus. The amount of time praying is normally distributed and is measured on an interval/ratio scale. Graduate Undergraduate
15 9
17 11
10 9
13 6
11 5
17 6

b. Is this a one- or two tailed test?

c. Identify H0 and H1 for this study.

**Solution a** it is two-tailed test, because we are interested whether there is difference in time spent on praying (we are not interested, whether indegraduate spend more(or less) time on praying.): " is interested in whether there is a difference between undergraduate students and graduate students in the amount of time spent praying".

**b)** suppose that undegraduate spend $\xi^{(1)} \simeq \mathcal{N}(\mu_1, \sigma_1^2)$, graduate students spend $\xi^{(2)} \simeq \mathcal{N}(\mu_2, \sigma_2^2)$. Then H0: $\mu_1 = \mu_2$, consequently H1: $\mu_1 \neq \mu_2$