

Answer on Question #51509 – Math – Statistics and Probability

A researcher studies the number of steps college students take per day. She finds that the number of steps college students take per day has a Normal distribution with a mean of 5500 and standard deviation 1600. She believes students who do not live on campus take more steps than those who do live on campus. Write both the null hypothesis and the alternative hypothesis she would use to verify her suspicion.

Solution

$$H_0: \mu_1 \leq \mu_2$$

$$H_a: \mu_1 > \mu_2$$

Here μ_1 is the mean number of steps college students who do not live on campus take per day, μ_2 is mean number of steps college students who live on campus take per day.

The null hypothesis H_0 : students who do not live on campus take no more steps than those who do live on campus.

The alternative hypothesis H_a : students who do not live on campus take more steps than those who do live on campus.