The heights of the members of a large sports club are normally distributed. A random sample of 11 members of the club is chosen and their heights, x cm, are measured. The results are summarised as follows, where $\bar{x}$ denotes the sample mean of x.

$$\bar{x} = 176.2 \qquad \Sigma(x-\bar{x})^2 = 313.1$$

Test, at the 5% significance level, the null hypothesis that the population mean height for members of this club is equal to 172.5 cm against the alternative hypothesis that the mean differs from 172.5 cm. [5]