

Raman is researching the heights of male giraffes in a particular region. Raman assumes that the heights of male giraffes in this region are normally distributed. He takes a random sample of 8 male giraffes from the region and measures the height, in metres, of each giraffe. These heights are as follows.

5.2 5.8 4.9 6.1 5.5 5.9 5.4 5.6

(a) Find a 90% confidence interval for the population mean height of male giraffes in this region. [5]

Raman claims that the population mean height of male giraffes in the region is less than 5.9 metres.

(b) Test at the 2.5% significance level whether this sample provides sufficient evidence to support Raman's claim. [4]