The times taken for students at a college to run 200 m have a normal distribution with mean μ s. The times, x s, are recorded for a random sample of 10 students from the college. The results are summarised as follows, where $\bar{x}$ is the sample mean.

$$\bar{x} = 25.6 \qquad \Sigma(x-\bar{x})^2 = 78.5$$

(a) Find a 90% confidence interval for μ. [4]

A test of the null hypothesis $\mu = k$ is carried out on this sample, using a 10% significance level. The test does not support the alternative hypothesis $\mu < k$.

(b) Find the greatest possible value of k. [3]