A scientist is investigating the lengths of the leaves of birch trees in different regions. He takes a random sample of 50 leaves from birch trees in region A and a random sample of 60 leaves from birch trees in region B. He records their lengths in cm, x and y, respectively. His results are summarised as follows.

$$\Sigma x = 282 \qquad \Sigma x^2 = 1596 \qquad \Sigma y = 328 \qquad \Sigma y^2 = 1808$$

The population mean lengths of leaves from birch trees in regions A and B are μ_A cm and μ_B cm respectively.

Carry out a test at the 5% significance level to test the null hypothesis $\mu_A = \mu_B$ against the alternative hypothesis $\mu_A \neq \mu_B$. [8]