4 A researcher is interested in whether there is a difference between two schools in students' aptitude for English. She randomly chooses 10 students from school X and 8 students of a similar age from school Y to take a written English test. The scores for the students from school X (x) and school Y (y) are summarised as follows.

$$\Sigma x = 612 \qquad \Sigma x^2 = 40\,104 \qquad \Sigma y = 444 \qquad \Sigma y^2 = 27\,460$$

You should assume that the two distributions are normal and have the same population variance.

(a) Find a 95% confidence interval for the difference in the mean scores for students from school X and students from school Y in the written English test. [6]

(b) Use the confidence interval you found in part **(a)** to explain why there is insufficient evidence at a 5% significance level to suggest that the English scores of students from school X and students from school Y are different. [1]