

Take Home Assignment 6 - Hypothesis Testing

Show all workings and diagrammatic representations.

Question 1 Production Rates

A manufacturing company wishes to find out whether the productivity of its workforce has increased now that they have a new machine. The factory examined the records for a random sample of 9 hours over the past month. The hourly production rates for these 9 hours were:

142 175 162 158 190 154 160 185 167

Suppose the production rate before the use of the new machine is 155 units per hour. Test at 5% if the new machine has increased workers' productivity on average using

- (a) ***p-value approach***, and
- (b) ***critical value approach***.

Note: For part (a), you can use either the *t*-table to give an approximate *p*-value or alternatively Excel to obtain a more accurate *p*-value. However, you will not be penalised if you use the *t*-table.

Due: Friday 20th September by 11:59 pm.