The University of Melbourne
CVEN30008 Engineering Risk Analysis

Tutorial 8

Hypothesis Testing Part 1

Quality Risk

1. **An ultralow particulate air filter is used to maintain uniform airflow in production areas in a clean room. A simple random sample of 58 filters from a certain vendor was tested. The sample mean velocity was 39.6 cm/s, with a standard deviation of 7 cm/s. Let μ represent the mean air velocity obtained from filters supplied by this vendor.**

   - Can you conclude that the mean velocity is less than 40 cm/s? (Assume a significant level of 0.05)

   - Use MATLAB to verify your results.

Quality Risk

2. **A sample of 18 pieces of laminate had a mean warpage of 1.88 mm and a standard deviation of 0.21 mm. Can it be concluded that the mean warpage for this type of laminate is less than 2 mm (Assume the significant level is 0.05)?**

   Use MATLAB to verify your results.