Exact Test for Ratio of Two Variances

1. A random sample of size 10 is drawn from a normal population whose population mean is 66. The sample observations are 62, 63, 64, 65, 67, 67, 66 ,69 , 70 and 72. Another random sample of size 12 drawn from a normal population with the same mean constitutes observations 60, 62, 63, 64, 66, 66, 67, 69, 70, 71, 71 and 72. Test whether the two variances can be taken to be equal.
2. The following data set contains 480 ceramic strength measurements for two batches of material. The summary statistics for each batch are shown below.

**BATCH 1:**

NUMBER OF OBSERVATIONS = 240

MEAN = 688.9987

STANDARD DEVIATION = 65.54909

**BATCH 2:**

NUMBER OF OBSERVATIONS = 240

MEAN = 611.1559

STANDARD DEVIATION = 61.85425

Test whether the variances of the two batches are equal, when

1. Population means are known to be µ1 = 685 and µ2 = 615.
2. Population means are unknown.