

Placement Algorithm - Input 2
F-Test Two-Sample for Variances

Random Penalty

| | <i>Variable 1</i> | <i>Variable 2</i> |
|---------------------|-------------------|-------------------|
| Mean | -55.0167 | -193.39 |
| Variance | 31.23981 | 18764.77 |
| Observations | 480 | 960 |
| df | 479 | 959 |
| F | 0.001665 | |
| P(F<=f) one-tail | 0 | |
| F Critical one-tail | 0.876431 | |

$M(1) > M(2)$ and $F < F \text{ Critical} \Rightarrow \text{Equal}$

t-Test: Two-Sample Assuming Equal Variances

| | <i>Variable 1</i> | <i>Variable 2</i> |
|------------------------------|-------------------|-------------------|
| Mean | -55.0167 | -193.39 |
| Variance | 31.23981 | 18764.77 |
| Observations | 480 | 960 |
| Pooled Variance | 12524.6 | |
| Hypothesized Mean Difference | 0 | |
| df | 1438 | |
| t Stat | 22.11791 | |
| P(T<=t) one-tail | 7.67E-94 | |
| t Critical one-tail | 1.645914 | |
| P(T<=t) two-tail | 1.53E-93 | |
| t Critical two-tail | 1.961615 | |

$t \text{ Stat} > t \text{ Critical} \Rightarrow \text{Random is better}$