X	Y
190	192
126	148
167	184
152	147
140	161
162	175
159	174
176	167
160	190
165	166
143	152
190	149
139	171
169	175
144	148
122	126
142	122
171	149
153	130
175	144
152	160
137	120
159	192
128	140
128	171
142	168
166	133
171	179
192	148
148	144

$$m_x = \frac{1}{n} \sum_{i=1}^{n} x_i = 155.6$$

$$m_y = \frac{1}{n} \sum_{i=1}^{n} y_i = 157.5$$

$$\widehat{S}_x^2 = \frac{1}{n-1} \sum_{i=1}^{n} (x_i - m)^2 = 368.80$$

$$\widehat{S}_y^2 = \frac{1}{n-1} \sum_{i=1}^{n} (y_i - m)^2 = 427.02$$

$$\psi_{est} = \frac{\widehat{S}_x^2}{\widehat{S}_y^2} = \frac{368.80}{427.02} = 0.864$$

$$\psi_{hi} = F_{5.0\%}(29, 29) = 1.861$$

$$\psi_{lo} = \frac{1}{\psi_{hi}} = \frac{1}{1.861} = 0.537$$

$$0.537 < 0.864 < 1.861$$

$$\sigma_x^2 = \sigma_y^2 \; for \; \alpha = 0.1$$

$$\psi_{est} = \frac{|m_x - m_y|}{\sqrt{\frac{(n_1-1)*\widehat{S}_x^2 + (n_2-1)*\widehat{S}_y^2}{(n_1+n_2-2)}}} * \sqrt{\frac{n_1 n_2}{n_1 + n_2}}$$

$$= \frac{|155.6 - 157.5|}{\sqrt{\frac{29*368.800+29*427.017}{58}}} * \sqrt{\frac{30*30}{60}} = 0.369$$

$$\psi_{hi} = t_{5.0\%}(n_1 + n_2 - 2) = t_{5.0\%}(58) = 1.672$$

$$\psi_{lo} = -\psi hi = -1.672$$

$$-1.672 < 0.369 < 1.672$$

$$m_x = m_y \ \ for \ \alpha = 0.1$$