$$SD = \sqrt{\frac{\sum fx^2}{N} - \bar{x}^2}$$

Mean

$$\bar{x} = \frac{\sum fx}{Ne} = \frac{1102}{100} = 11.02$$

Variance

$$S^2\text{e} = \frac{\sum fx^2}{\text{Ne}} - \overline{Xe}^2 = \frac{12824}{100} - (11.02)^2 = 6.79$$

Standard Deviation

$$SD = \sqrt{\frac{\sum fx^2}{N} - \bar{x}\,\text{e}^2} = \sqrt{128.24 - 121.44} = \sqrt{6.79} = 2.60$$

Mean

$$\bar{x} = \frac{\sum fx}{Ne} = \frac{1026}{100} = 10.26$$

$$\overline{Xc} = 10.26$$

Variance

$$S^2e = \frac{\sum fx^2}{\text{Ne}} - \overline{Xc}^2 = \frac{11262}{100} - 105.26 = 7.36$$

Standard Deviation

$$SD = \sqrt{\frac{\sum fx^2}{N}} - \bar{x}\,c^2 = \sqrt{112.62 - 105.26} = 2.71$$

t-test

$$TN_1 - N_2 = \frac{(X_1 - X_2)\sqrt{(N_1 + N_2 - 2)(N_1 N_2)}}{\sqrt{(N_1 S_1^{\,2} + N_2 S_2^{\,2})(N_1 + N_2)}}$$

$$= \frac{(11.02 - 10.26)\sqrt{(100 + 100 - 2)(100x100)}}{\sqrt{(100x(260)^2 + 100(2.71)^2(200)}} = 2.01$$

Mean

$$\bar{x} = \frac{\sum fx}{Ne} = \frac{1034}{100} = 10.34$$

$$\overline{Xc} = 10.34$$

Variance

$$S^2e = \frac{\sum fx^2}{\text{Ne}} - \overline{Xc}^2 = \frac{11408}{100} - (10.34)^2$$

$$= 114.08 - 106.91$$

$$S^2e = 7.17$$

Standard Deviation

$$SD = \sqrt{\frac{\sum fx^2}{N}} - \bar{x}e^2 = \sqrt{114.08 - 106.91} = 2.67$$

Mean

$$\bar{x} = \frac{\sum fx}{Ne} = \frac{970}{100} = 09.70$$

$$\overline{Xc} = 09.70$$

Variance

$$S^2\text{e} = \frac{\sum fx^2}{\text{Nc}} - \overline{Xc}^2 = \frac{10010}{100} - (09.7)^2$$

$$= 10010 - 94.09$$

$$S^2\text{e} = \mathbf{6.01}$$

Standard Deviation

$$SD = \sqrt{\frac{\sum fx^2}{N}} - \bar{x}\,\text{c}^2 = \sqrt{6.01} = 2.45$$

t-test

$$TN_1 - N_2 = \frac{(X_1\text{-}X_2)\sqrt{(N_1 + N_2 - 2)(N_1 N_2)}}{\sqrt{(N_1 S_1^{\,2} + N_2 S_2^{\,2})(N_1 + N_2)}}$$

$$= \frac{(10.34 - 9.70)\sqrt{(100 + 100 - 2)(100x100)}}{\sqrt{(100x(2.67)^2 + 100(2.45)^2(200)}} = 1.75$$