$$Cov(X,Y) = \frac{\sum_{i=1}^{k} XY}{n} - \overline{X} \overline{Y},$$

$$s_{X} = \sqrt{\frac{\sum_{i=1}^{k} f_{i} (X_{i} - \overline{X})^{2}}{n}} e s_{Y} = \sqrt{\frac{\sum_{i=1}^{k} f_{i} (Y_{i} - \overline{Y})^{2}}{n}}$$