Line of Regression

1. Finding m (slope):

$$m = \frac{n\sum xy - (\sum x)(\sum y)}{n\sum x^2 - (\sum x)^2}$$

$$m = \frac{(20)(976) - (126)(15.5)}{(20)(7940) - (126)^2}$$

$$m = \frac{19520 - 1953}{158800 - 15876}$$

$$m = \frac{17567}{142924}$$

$$m = 0.1229$$

2. Finding b(y-intercept):

$$b = \frac{\sum y}{n} - m\frac{\sum x}{n}$$

$$b = \frac{15.5}{20} - 0.1229\frac{126}{20}$$

$$b = 0.775 - (0.1229)(6.3)$$

$$b = 0.775 - 0.774$$

$$b = 0.031$$

Equation of the Line of Regression:

$$y = 0.1229x + 0.031$$

Where *x* represents the height and *y* represents the shoe size.