

$$s^2 = \frac{\sum (x_i - \bar{x})^2}{n-1} \quad n=5 \quad \bar{x}=3 \quad \sum (x_i - \bar{x})^2 = 10$$

$$s^2 = \frac{10}{4} = 2.5$$

$$s^2 = \frac{2^2 + 1^2 + 0^2 + 1^2 + 2^2}{4}$$

$$\text{Var}(\text{estimator}) = \frac{s^2}{n}$$

$$.05 = \sqrt{\frac{s^2}{n}}$$

$$\sqrt{n} = \frac{\sqrt{2.5}}{.05}$$

$$n = \frac{2.5}{.05^2} = 1000$$

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