

Quick Questions 4 Measuring Dispersion of Ungrouped Data

I. Place the number of the appropriate formula next to the parameter or statistic it describes.

- A. Population average deviation _____
- B. Population variance _____
- C. Population standard deviation _____
- D. Alternative population variance _____
- E. Alternative population standard deviation _____
- F. Chebyshev's rule _____
- G. Sample variance _____
- H. Sample standard deviation _____
- I. Alternative sample variance _____
- J. Alternative sample standard deviation _____

II. Calculate the following statistics using this sample data.

Data: 5, 7, 3, 8, 6, 10, 9, 8

$$\bar{x} = 7$$

- A. Variance (use alternative formula)

1. $\frac{\sum x - \mu }{N}$	6. $1 - \frac{1}{k^2}$
2. $\frac{\sum (x - \mu)^2}{N}$	7. $\frac{\sum (x - \bar{x})^2}{n - 1}$
3. $\sqrt{\frac{\sum (x - \mu)^2}{N}}$	8. $\sqrt{\frac{\sum (x - \bar{x})^2}{n - 1}}$
4. $\frac{\sum X^2}{N} - \left(\frac{\sum X}{N}\right)^2$	9. $\frac{\sum x^2 - \frac{(\sum x)^2}{n}}{n - 1}$
5. $\sqrt{\frac{\sum X^2}{N} - \left(\frac{\sum X}{N}\right)^2}$	10. $\sqrt{\frac{\sum x^2 - \frac{(\sum x)^2}{n}}{n - 1}}$