

\bar{x}

Mean: _____

Test Scores: 22, 99, 102, 33, 57, 75, 100, 81, 62, 29

n: 10

$$\bar{x} = \frac{\sum x}{n} = \frac{22+99+\dots}{10}$$

Test Score (x)	Difference from the mean (x - \bar{x})	(Difference from the mean) ² (x - \bar{x}) ²
22	22-66=-44	(-44) ² =1,936
99	99-66=33	(33) ² =1,089
102	102-66=36	(36) ² =1,296
33	33-66=-33	(-33) ² =1,089
57	57-66=-9	(-9) ² =81
75	75-66=9	(9) ² =81
100	100-66=34	(34) ² =1,156
81	81-66=15	(15) ² =225
62	62-66=-4	(-4) ² =16
29	29-66=-37	(-37) ² =1,369
Sum of (Difference from the mean) ² $\sum(x - \bar{x})^2$		8,338

$$\bar{x} = 66$$

+

Sum of (Difference from the Mean)² divided by degrees of freedom (n-1): 9 → This is called variance.

$$\frac{\sum(x - \bar{x})^2}{(n-1)} = \frac{8,338}{9} = 926.44$$

Final Step:

Standard deviation = square root of what you just calculated (variance).

$$\text{Standard deviation} = \sqrt{\frac{\sum(x - \bar{x})^2}{(n-1)}} = \underline{\hspace{2cm}}$$

$$\sqrt{926.44} = 30.44$$