STANDARD DEVIATION USING THE TI-83 or TI-84

EX: 2, 4, 6, 8, 10

$$s = \sqrt{\frac{\Sigma x^2 - \frac{(\Sigma x)^2}{n}}{n-1}} = \sqrt{\frac{220 - \frac{30^2}{5}}{4}}$$

x	x^2
2	4
4	16
6	36
8	64
10	100
30	220
Σx	Σx^2

$$= \sqrt{\frac{40}{4}} =$$

$$= \sqrt{10} \approx 3.16$$

Given a Frequency Distribution

x	f	$f \cdot x$	$f \cdot x^2$
2	3	6	12
4	2	8	32
6	1	6	36
8	5	40	320
10	4	40	400
$n = 15$		100	800

$$s = \sqrt{\frac{\sum(f \cdot x^2) - \frac{\left[\sum(f \cdot x)\right]^2}{n}}{n-1}}$$

$$= \sqrt{\frac{\sum(f \cdot x^2) - n \cdot \bar{x}^2}{n-1}}$$

CORRECTION 80

$$= \sqrt{\frac{800^2 - \frac{100^2}{15}}{14}} \approx 3.08$$

Given a Grouped Distribution

	f	Midpoints x
0-9	3	4.5
10-19	2	14.5
20-29	1	24.5
30-39	5	34.5
40-49	4	44.5
	$n = 15$	
	L_2	L_1

$s \approx 16.7$ ← CORRECTION 13.44