

AGE	FREQ
10-19	20
20-29	13
30-39	5

1. AGES	(f) FREQ	(X) MIDPOINTS	f · X	$\bar{X} = \frac{\sum f \cdot X}{\sum f}$ $= \frac{385}{30}$ $\bar{X} = 12.8$
0-4	3	$\frac{0+5}{2} = 2.5$	3(2.5) = 7.5	
5-9	8	7.5	8(7.5) = 60	
10-14	5	12.5	5(12.5) = 62.5	
15-19	12	17.5	12(17.5) = 210	
20-24	<u>2</u>	22.5	2(22.5) = <u>45</u>	
$\sum f = 30$			$\sum f \cdot X = 385$	

2. AGES	"f" FREQ	MID "X" POINTS	f · X	X - \bar{X}	(X - \bar{X}) ²	(X - \bar{X}) ² f
0-9	2	$\frac{0+10}{2} = 5$	2(5) = 10	5 - 23.5 = -18.5	(-18.5) ² = 342.25	342.25(2) = 684.5
10-19	4	15	4(15) = 60	15 - 23.5 = -8.5	(-8.5) ² = 72.25	72.25(4) = 289
20-29	10	25	10(25) = 250	25 - 23.5 = 1.5	(1.5) ² = 2.25	2.25(10) = 22.5
30-39	3	35	3(35) = 105	35 - 23.5 = 11.5	(11.5) ² = 132.25	132.25(3) = 396.75
40-49	<u>1</u>	45	1(45) = <u>45</u>	45 - 23.5 = 21.5	(21.5) ² = 462.25	462.25(1) = 462.25
$\sum f = 20$			$\sum f \cdot X = 470$			$\sum (X - \bar{X})^2 f = 1855$

$$\bar{X} = \frac{\sum f \cdot X}{\sum f} = \frac{470}{20} = 23.5$$

$$S = \sqrt{\frac{\sum (X - \bar{X})^2 f}{\sum f - 1}}$$

$$= \sqrt{\frac{1855}{20-1}}$$

$$= \sqrt{\frac{1855}{19}}$$

$$= 9.880869342$$

$$S \approx 9.9$$

$$S^2 = 97.6$$