

$$1. \quad \bar{X} = \frac{5+7+9+11+13}{5} = 9$$

X	$X - \bar{X}$	$(X - \bar{X})^2$	X^2
5	-4	16	25
7	-2	4	49
9	0	0	81
11	2	4	121
13	4	16	169
$\Sigma X = 45$		$\Sigma = 40$	$\Sigma X^2 = 445$

$$(a) \quad s = \sqrt{\frac{\Sigma (X - \bar{X})^2}{n-1}} = \sqrt{\frac{40}{5-1}}$$

$$= \sqrt{\frac{40}{4}} = \sqrt{10}$$

$$= 3.162$$

$$(b) \quad s = \sqrt{\frac{n \Sigma X^2 - (\Sigma X)^2}{n(n-1)}}$$

$$= \sqrt{\frac{5(445) - (45)^2}{5(5-1)}}$$

$$= 3.162$$

$$2 \quad (a) \quad L = \left(\frac{K}{100} \right) n$$

$$Q_1 \Rightarrow K = 25, n = 38$$

$$Q_1 = \frac{25}{100} \times 38 = 9.5 \approx 10$$

$$Q_1 = 8$$

$$Q_2 \Rightarrow K = 50$$

$$L_2 = \frac{50}{100} \times 38 = 19$$

$$Q_2 = 12$$

$$Q_3 \Rightarrow K = 75$$

$$L_3 = \frac{75}{100} \times 38 = 28.5 \approx 29$$

$$Q_3 = 15$$

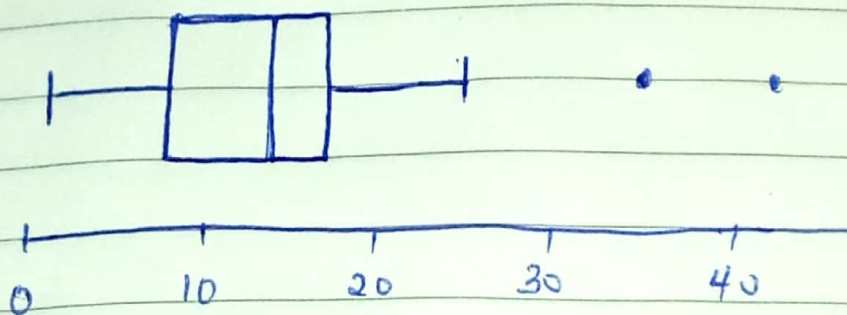
$$P_{71} \Rightarrow K = 71$$

$$L_{71} = \frac{71}{100} \times 38 = 26.98 \approx 27$$

$$P_{71} = 15$$

(b) Minimum value = 1
 First Quartile = 8
 Median = 12
 Third Quartile = 15
 Maximum value = 25

(c)



3. Tar	f	X	X ²	X.f	X ² .f
10-13	1	11.5	132.25	11.5	132.25
14-17	2	15.5	240.25	31	480.5
18-21	10	19.5	380.25	195	3802.5
22-25	7	23.5	552.25	164.5	3865.75
26-29	2	27.5	756.25	55	1512.5
TOTAL	n=22			$\Sigma X.f = 457$	9793.5

$$S = \sqrt{\frac{22(9793.5) - (457)^2}{22(22-1)}}$$

$$= 3.7819$$