

## Data For Girls' Shoe Sizes

Shoe Size	Frequency
$4 < x \leq 5$	1
$5 < x \leq 6$	1
$6 < x \leq 7$	7
$7 < x \leq 8$	6
$8 < x \leq 9$	2
$9 < x \leq 10$	3
<b>Total</b>	<b>20</b>

### Finding the mean ( $\mu$ )

$$\text{mean } (\mu) = \frac{4.5(1)+5.5(1)+6.5(7)+7.5(6)+8.5(2)+9.5(3)}{20}$$

$$\text{mean } (\mu) = \frac{4.5+5.5+45.5+45+17+28.5}{20}$$

$$\text{mean } (\mu) = \frac{146}{20}$$

$$\text{mean } (\mu) = 7.3$$

### Finding the Standard Deviation ( $\sigma$ )

$$[(5 - 7.3)^2] \times 1 = 5.29$$

$$[(6 - 7.3)^2] \times 1 = 1.69$$

$$[(6.5 - 7.3)^2] \times 6 = 3.84$$

$$[(7 - 7.3)^2] \times 6 = 0.09$$

$$[(7.5 - 7.3)^2] \times 4 = 0.16$$

$$[(8 - 7.3)^2] \times 2 = 0.98$$

$$[(8.5 - 7.3)^2] \times 1 = 1.44$$

$$[(9 - 7.3)^2] \times 1 = 2.89$$

$$[(9.5 - 7.3)^2] \times 2 = 9.68$$

$$[(10 - 7.3)^2] \times 1 = 7.69$$

$$\text{mean } (\mu) = \frac{5.29+1.69+3.84+0.09+0.16+0.98+1.44+2.89+9.68+7.69}{20}$$

$$\text{mean } (\mu) = \frac{33.75}{20}$$

$$\text{mean } (\mu) = 1.69$$

$$\text{standard deviation } (\sigma) = \sqrt{1.69}$$

$$\text{standard deviation } (\sigma) = 1.30$$

### Finding the 5-number summary

{ | 5,6,6.5,6.5,6.5 | 6.5,6.5,6.5,7,7.5 | 7.5,7.5,7.5,8,8 | 8.5,9,9.5,9.5,10 | }

{ 5,6.5,7.5,8.25,10 }

Minimum = 5

$Q_1 = 6.5$

Median = 7.5

$Q_3 = 8.25$

Maximum = 10

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