

1. The pulse rates (per minute) for 6 patients visited a doctor this morning were recorded as the following: 67 77 88 75 72 76. Find the **sample mean** and the **sample standard deviation** of this sample of pulse rates.

Sample Mean = 75.83 Sample Standard Deviation = 6.97 $s^2 = 48.57$

2. Answer parts 1) to 8) using the following pulse rates data.

65 72 78 80 71 76 60 82 91 69 90 112 71 72 71
 60 65 69 71 71 71 72 72 76 78 80 82 90 97 112

- 1) 70th percentile of the data above: 80
 $n \cdot p / 100 = 15 \cdot 70 / 100 = 10.5 \uparrow 11$
- 2) The percentile of a value 76 in the data above is: 57th per: $\frac{8 + .5}{15} \times 100\% = 57$
- 3) Minimum = 60 $Q_1 = 71$ Median = 72 $Q_3 = 82$ Maximum = 112
- 4) Inter-quartile Range = 82 - 71 = 11
- 5) The distribution of this data is (describe the skewness) to the right
- 6) Make a Stemplot.
- 7) Make a frequency histogram using the classes starting from class "0 - < 10", or "say 0 to less than 10".
- 8) Make a Boxplot and **identigy outliers** if they exist and also indicate them in the boxplot using fences.

3. Suppose that the pulse rates (per minute) of healthy male adults from a large population is normally distributed with mean $\mu = 69$ and standard deviation $\sigma = 3$.

- a) What does the Empirical Rule say about the percentage of this distribution within 63 to 75?

95%



- b) What does the Chebychev's Rule say about the percentage of this distribution within 63 to 75?

at least 75% at least $1 - \frac{1}{k^2}$ in K.S.D. $1 - \frac{1}{2^2} = 1 - \frac{1}{4} = \frac{3}{4} = .75$

- c) If a person's pulse rate is 72, what would be the z-score of his/her pulse rate?

d)

$\bar{x} = 70$
 $S = 2$
 Sample z-score = $\frac{x - \bar{x}}{S} = \frac{72 - 70}{2} = 1$

$z = \frac{x - \mu}{\sigma}$ (population z-score)
 $= \frac{72 - 69}{3} = \frac{3}{3} = 1$

$1 - \frac{1}{4^2} = \frac{15}{16} = .9375$