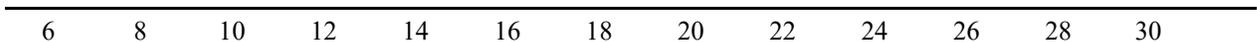


12 6 13 25 10 17 11 8 21 14 10 33 16 6 18 21

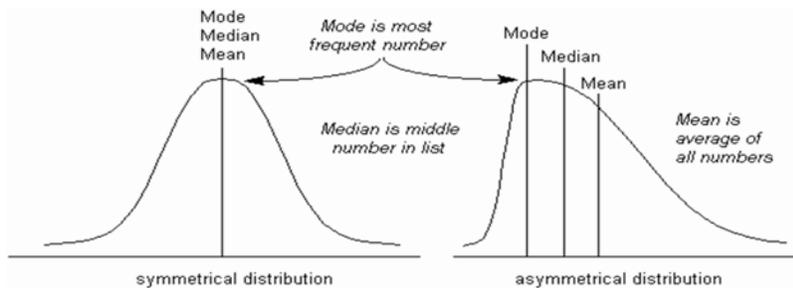
For the above data that represent the homework scores, **Use calculator TI-83 or TI-84 to find**

- 1) Mean, (Round in 2 decimal) 1) _____
- 2) Median, (Round in 2 decimal) 2) _____
- 3) Q1, (Round in 2 decimal) 3) _____
- 4) Q3, (Round in 2 decimal) 4) _____
- 5) Standard deviation, (Round in 2 decimal) 5) _____
- 6) Variance, (Round in 2 decimal) 6) _____
- 7) Apply 68% empirical Rule, (Round in 2 decimal) 7) _____
- 8) Apply 95% empirical Rule, (Round in 2 decimal) 8) _____
- 9) Use the number line at bottom to do a **Dot Plot** for above data and comment on its distribution.



10) Compare your answers on parts 1 through 4 with practice # 1 and draw conclusion.

11) Below is the picture of locations of **mean, mode and median** for centered and skewed to the right histogram. Sketch a skewed to the left histogram and **draw and label** mean, mode and median.



B: Use **both formula** and the **Ti Calculator** to find the mean, standard deviation and the variance for the following data 7, 6, 3, 9, 12, 5, and also draw the **dot-plot**.

x	$\bar{x} = \frac{\sum x}{n} =$	$(x - \bar{x})$	$(x - \bar{x})^2$
7			
6			
3			
9			
12			
5			
$\sum x =$			$\sum (x - \bar{x})^2 =$

$$s = \sqrt{\frac{\sum (x - \bar{x})^2}{n - 1}} = \sqrt{\frac{\quad}{\quad}} = \sqrt{\quad} = \quad \quad \text{Variance} = s^2 = \quad$$

Apply 68% empirical rule to data in Problem B

Apply 95% empirical rule to data in Problem B

C. Use **both formula** and the **Ti Calculator** to find the mean, and only **Ti Calculator** to find the standard deviation and the variance

Test Scores	Frequency = f	midpoint m	$f \times m$	$f \times m^2$
0 – 8	12			
8 – 16	20			
16 – 24	32			
24 – 32	22			
32 – 40	14			
	$\sum f = n =$		$\sum f \times m =$	$\sum f \times m^2 =$

$$\text{Mean: } \bar{X} = \frac{\sum f \times m}{n} = \frac{\quad}{\quad} = \quad \quad \text{Stand Dev: } s = \sqrt{\frac{n \sum f \times m^2 - (\sum f \times m)^2}{n(n-1)}} = \sqrt{\frac{\quad}{\quad}} = \quad$$

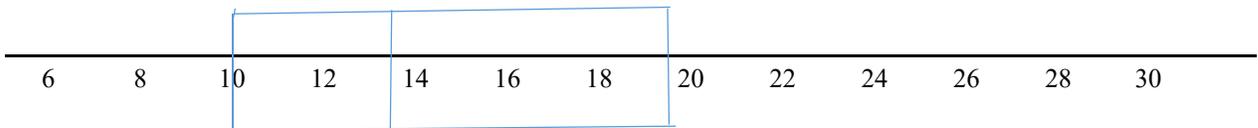
Apply 68% empirical rule to data in Problem C

Apply 95% empirical rule to data in Problem C

12 6 13 25 10 17 11 8 21 14 10 33 16 6 18 21

For the above data that represent the homework scores, Use calculator TI-83 or TI-84 to find

- 1) Mean, (Round in 2 decimal) 1) 15.06
- 2) Median, (Round in 2 decimal) 2) 13.50
- 3) Q1, (Round in 2 decimal) 3) 10
- 4) Q3, (Round in 2 decimal) 4) 19.5
- 5) Standard deviation, (Round in 2 decimal) 5) 7.31
- 6) Variance, (Round in 2 decimal) 6) 53.40
- 7) Apply 68% empirical Rule, (Round in 2 decimal) $15.06 \pm 1(7.31)$ 7) 7.75 to 22.37
- 8) Apply 95% empirical Rule, (Round in 2 decimal) $15.06 \pm 2(7.31)$ 8) 0.44 to 29.68
- 9) Use the number line at bottom to do a **Dot Plot** for above data and comment on its distribution.

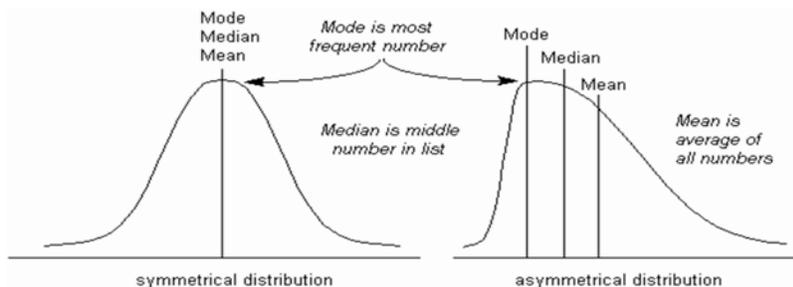


Distribution of data is Skewed to the right.

- 10) Compare your answers on parts 1 through 4 with practice # 1 and draw conclusion.

Compared with practice 1 every data is increased by 2, and the answers for mean, mode Q1, Q2, and Q3 all increased by 2.

- 11) Below is the picture of locations of **mean, mode and median** for centered and skewed to the right histogram. Sketch a skewed to the left histogram and **draw and label** mean, mode and median.



B: Use **both formula** and the **Ti Calculator** to find the mean, standard deviation and the variance for the following data 7, 6, 3, 9, 12, 5, and also draw the **dot-plot**.

x	$\bar{x} = \frac{\sum x}{n} =$	$(x - \bar{x})$	$(x - \bar{x})^2$
7	7	0	0
6	7	-1	1
3	7	-4	16
9	7	2	4
12	7	5	25
5	7	-2	4
$\sum x =$			$\sum (x - \bar{x})^2 = 50$

$$s = \sqrt{\frac{\sum (x - \bar{x})^2}{n - 1}} = \sqrt{\frac{50}{6 - 1}} = \sqrt{10} = 3.16 \quad \text{Variance} = s^2 = 10$$

Apply 68% empirical rule to data in Problem B: $7 \pm 1(3.16)$ or (3.84, 10.16)

Apply 95% empirical rule to data in Problem B: $7 \pm 2(3.16)$ or (0.68, 13.32)

C. Use **both formula** and the **Ti Calculator** to find the mean, and only **Ti Calculator** to find the standard deviation and the variance

Test Scores	Frequency = f	midpoint m	$f \times m$	$f \times m^2$
0 – 8	12	4	48	192
8 – 16	20	12	240	2880
16 – 24	32	20	640	12800
24 – 32	22	28	616	17248
32 – 40	14	36	504	18144
	$\sum f = n = 100$		$\sum f \times m = 2048$	$\sum (f \times m^2) = 51264$

Mean: $\bar{X} = \frac{\sum f \times m}{n} = \frac{2048}{100} = 20.48$ Stand Dev:

$$s = \sqrt{\frac{n \sum f \times m^2 - (\sum f \times m)^2}{n(n - 1)}} = \sqrt{\frac{100(51264) - (2048)^2}{100(100 - 1)}} = \sqrt{\frac{932096}{9900}} = \sqrt{94.15} = 9.70$$

Apply 68% empirical rule to data in Problem C $20.48 \pm 1(9.70)$ (10.78, 30.18)

Apply 95% empirical rule to data in Problem C $20.48 \pm 2(9.70) = 20.48 \pm 19.4$ (1.08, 39.88)