Pg 107

2. $n = 12$

$\Sigma x = 72$

$\bar{x} = \frac{\Sigma x}{n} = \frac{72}{12} = 6$

4. $\bar{x} = \frac{\Sigma x}{n} = \frac{8+2+5+7+12+9+11+3+6}{9} = 7$

Pg 107

6. $n = 6$

X	$X - \bar{X}$
	1
	1
	1
	1
	1

The 6th score has a high probability of being 1 point above the mean.

8. $m = \frac{\Sigma X}{n}$

$n = \frac{\Sigma X}{m} = 56/8 = 7$

10. $n_1 = 10$ $\quad n_2 = 5$

$m = 8$ $\quad m = 2.$

$\frac{\Sigma X}{n} = m$

$\Sigma X = m * n = 10 \times 8 = 80$ - first sample

For second sample $\Sigma X = m * n = 5 \times 2 = 10$

$m = \frac{\Sigma X_1 + \Sigma X_2}{n_1 + n_2} = \frac{80 + 10}{10 + 5} = \frac{90}{15} = 6$

12.

X	f	fx
6	1	6
5	4	20
4	2	8
3	1	6
2		2

$\bar{X} = \frac{}{\Sigma fx} = \frac{1}{5}(6 + 20 + 8 + 6 + 2) = 8.4$

14. $n = 6$, $M = 10$

$M = \frac{\Sigma x}{n} \Rightarrow \Sigma x = M * n = 10 \times 6 = 60$

New $\Sigma x = 60 - 12 = 48$

New $m = \frac{\Sigma x}{n} = \frac{48}{6} = 8$

16. $n = 5$, $m = 12$

$\Sigma x = m * n = 12 * 5 = 60$

New $\Sigma x = 60 + 17 = 77$.

New $n = 6$

new $m = \frac{\Sigma x}{n} = \frac{77}{6} = 12.833$

18. $M = 6$

(a) The mean changes by 3

$\Sigma x = 6n$

(b) The mean drops by 1, mean $= 6 - 1 = 5$

c) New mean is original $M * 6 = 36$

(d) New mean is the original mean divided by 2

ie. $6/2 = 3$

26. 50th percentile corresponds to the median.

22. ~~[illegible]~~ 1, 4, 8, 7, 13, 26, 6

Ranked data

1 4, 6, 7, 8, 13 26

1 2 3 4 5 6 7

$k = \frac{1}{2}(n+1) = \frac{1}{2}(7+1) = 4$

Median = 7

24. $n = 10$

2, 3, 4, 4, 5, 5, 5, 6, 6, 7

b) Ranked data

	2	3	4	4	5	5	5	6	6	7
Rank	1	2	3.5	3.5	6	6	6	8.5	8.5	10

$k = \frac{1}{2}(n+1) = \frac{1}{2}(10+1) = 5.5$

Median = $4 + 5.5 - 3.5(5-4)$

Median = $4 + 2 = 6$

c) Data arranged in ascending order

2	3	4	4	5	5	5	6	6	7
1	2	3.5	3.5	6	6	6	8.5	8.5	10

Median $\Rightarrow k = 5$

Therefore median = 4.5

26. Data arranged

0, 2, 4, 5, 7, 7, 7, 7, 8, 8, 10, 11

R	1	2	3	4	6.5	6.5	6.5	6.5	9.5	9.5	11	12

$\text{Mean} = \frac{0+2+4+5+7+7+7+7+8+8+10+11}{12} = 6.333$

Median $\Rightarrow k = \frac{1}{2}(n+1) = \frac{1}{2}(12+1) = 6.5$

Median = 7

Mode = 7 (By observation)