11. It highlight the description of data distribution in a smaller intervals.

14. a.

Stem	leaf
2	3 2
3	4, 7 3, 9, 5, 4, 6, 7, 2, 8
4	6, 0, 8, 3, 8, 1, 5 9
5	1, 1, 6, 8, 0, 4 0 4 5, 0, 6, 1, 6, 5, 9, 7, 0
6	7, 9, 4, 2, 6, 4, 5, 3, 2, 0, 9, 6, 1, 0, 7, 2, 4, 6, 9, 8, 9, 2, 0, 3, 0
7	1, 0, 5, 5, 6, 3, 5, 5, 6, 2, 2, 4, 3, 0, 5, 8, 0
8	0, 8, 3, 2, 4, 4, 3, 2
9	2, 6, 8, 3, 2, 0, 5, 3, 7, 6, 3, 6, 3, 8, 1
10	5, 4, 8, 3, 4, 2, 5, 8, 4, 6
11	5, 2 9 3, 9, 9, 3
12	3, 7
13	8
14	3 6
15	0, 3, 5 0
18	9

Stem: ones digit
leaf: fraction digit

b. The typical flow rate is the median flow rate: 7.5 (L/min)

C. The display appear to be highly concentrated.

d. It is reasonably symmetric with the wave crest on axis stem 6 and decrease as it leave the axis.

e. the lower fourth point is 5.6 the upper fourth point is 9.6. $f_s = 4$ $1.5f_s = 6$. the point 18.9 is an outlier.

20. a.

stem	leaf
0	360, 340 960, 530, 540, 960, 450, 500, 100 510, 240, 396
1	280, 240, 50, 0, 320, 250, 120, 850, 670, 890, 419
2	100, 400, 120, 250, 320, 400, 460, 700, 730, 109
3	660, 330, 380 350, 870, 150, 150
4	390, 770
5	320 700, 220, 850, 770

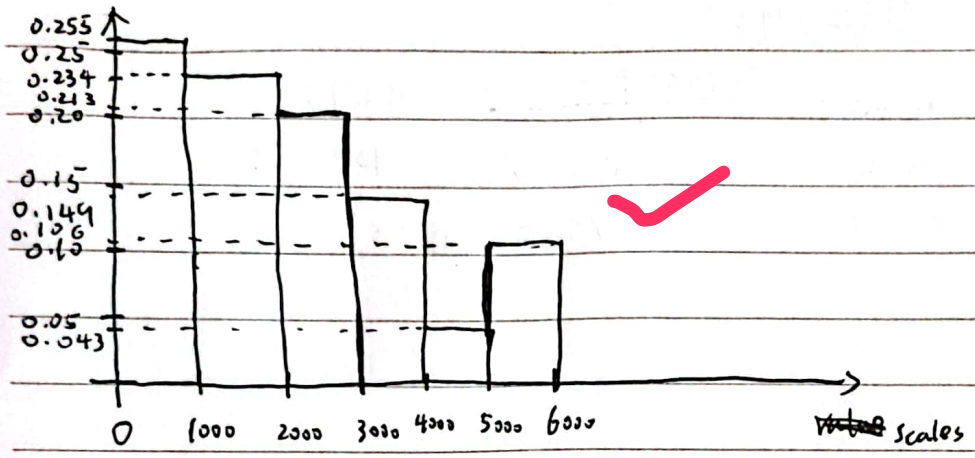
stem: thousands digit
leaf: hundreds digit

The data concentrated on two sides. it's bimodal with Positively skewed.

b.

value	number	frequency
0~1000	12	$\frac{12}{47} \approx 0.255$
1000~2000	11	$\frac{11}{47} \approx 0.234$
2000~3000	10	$\frac{10}{47} \approx 0.213$
3000~4000	7	$\frac{7}{47} \approx 0.149$
4000~5000	2	$\frac{2}{47} \approx 0.043$
5000~6000	5	$\frac{5}{47} \approx 0.106$

No.
Date



The proportion of subdivisions less than 2000 is 49%, Between 2000 and 4000 is 36%

The histogram is bimodal with Positively skewed.

Section 1.3

34. a. The mean of Urban sample: $\frac{(6.0+5.0+\cdots+23.0)}{11} = 21.5$

The mean of farm sample: $(4.0+14.0+\cdots+0.3)/15 = 8.68$.

They are average value of the sample. They are compared by its scale.

b. the median of Urban data is 17.0

the median of farm data is 9.0. They are the middle number on the data.

The reason for the difference is that the ~~number~~ median represent the middle order number and mean is the average value. The distribution result in the different.

c. for the urban data, the corresponding trimming percentages is 9.09%

and for the farm data is 6.67%

After the trimmig, the means of urban data is 16.9. and median is still 17.0.

the mean of farm data is 8.28. the median is still 9.0.

40. a. the median is $\frac{91+93}{2} = 92$.

25% trimmed mean is $\frac{(67+68+\cdots+139)}{24} = 94.75$

10% trimmed mean is $(36+\cdots+248)/40 = 102.225$

Sample mean $\bar{x} = (11+14+\cdots+513)/50 = 119.26$.

Section 1.4

44. a. range: $49.3 - 23.5 = 25.8$

b. $\bar{x} = (29.5+49.3+30.6+\cdots+31.6)/10 = 31.03$.

x_i	$x_i - \bar{x}$	$(x_i-\bar{x})^2$
29.5	-1.53	2.34
49.3	18.27	333.79
30.6	-0.43	0.18
28.2	-2.83	8.00
28.0	-3.03	9.18
26.3	-4.73	22.37
33.9	2.87	8.23
29.4	-1.63	2.66
23.5	-7.53	56.70
31.6	0.57	0.3

$s^2 = \frac{\sum_{i=1}^{10}(x_i-\bar{x})^2}{9} = 49.31$

c. $s = \sqrt{s^2} = 7.02$

d. $s^2 = \frac{\sum_{i=1}^{10} x_i^2 - (\sum_{i=1}^{10} x_i)^2/10}{9} = 49.31$

18 35

No.
Date

56.

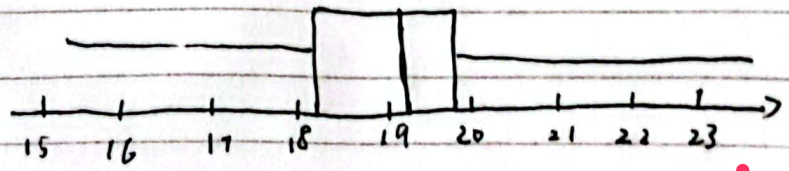
stem	leaf.
15	30
16	35 20
17	75, 73, 85, 48, 15
18	85, 68, 82, 00,
19	58, 08, 62, 20, 17, 48, 97, 07, 90, 03, 45, 37, 20, 60, 33 50
20	05, 00
21	22
22	75 25.
23	78 25

Stem: tens and ones digit
Leaf: fraction digit.

the median is the 18th data: 19.20.

the lower fourth: $\frac{18.00+18.68}{2} = 18.34$

the upper fourth: $\frac{19.90+19.62}{2} = 19.76$. $fs = 19.76 - 18.34 = 1.42$.



$1.5fs = 2.13$ $18.34 - 2.13 = 16.21$ $19.76 + 2.13 = 21.89$.

the point 15.30, 16.20, 22.75, 22.25, 23.25, 23.78 are outlier.

B