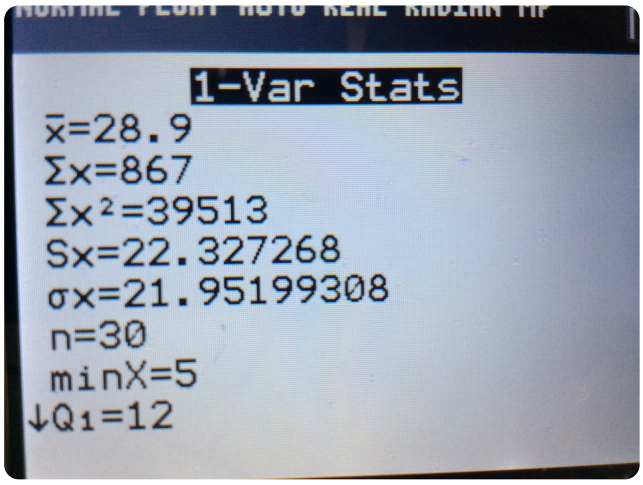
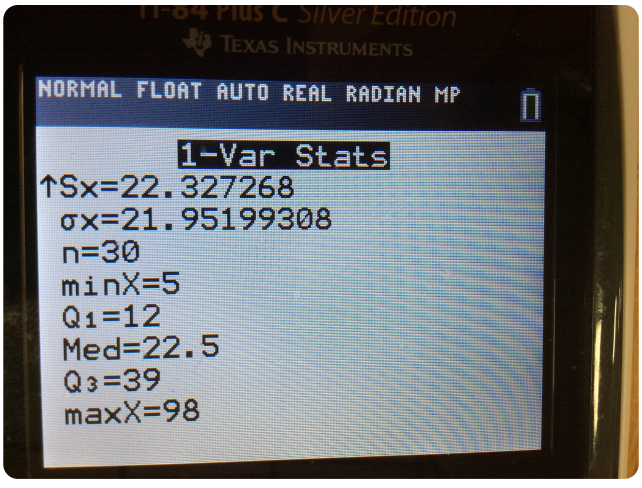
25	12	53	8	26	5
6	21	14	19	12	15
13	37	11	51	39	32
98	23	45	22	7	9
29	20	32	62	80	41



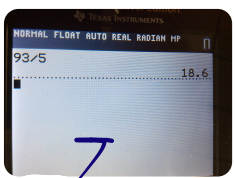


RANGE = MAX − MIN = 98 − 5 = 93

Creating a Frequency Distribution Table:

1. Decide on the number of intervals you wish to use. (usually given to you in the problem)
2. Divide the range of the data by the number of intervals to get an *estimate* of class width. Then round UP accordingly.
3. The first interval begins with the smallest data value.
4. Add the answer in part 2 to the smallest data value to get the starting value of the second interval.
5. Determine the ending value of the first interval accordingly.
6. Use your calculator to create a histogram to get the frequency of each interval.

$\frac{93}{5}$

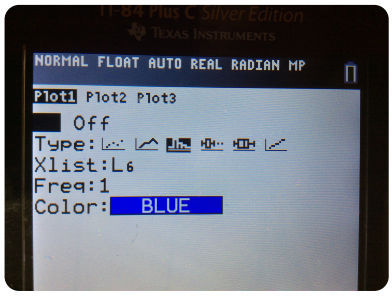


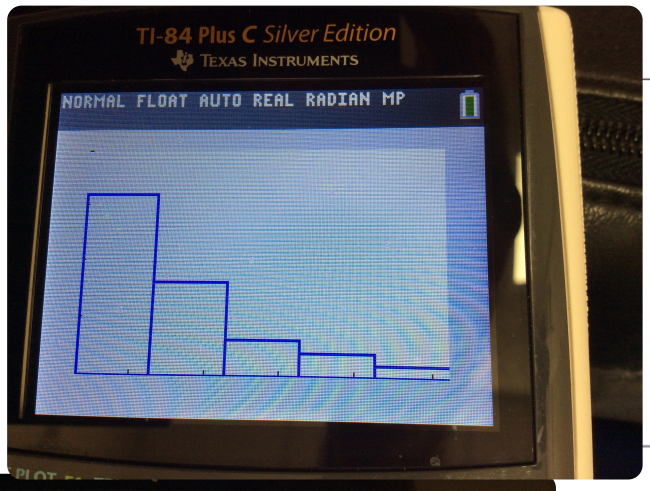
→ Interval size = 19

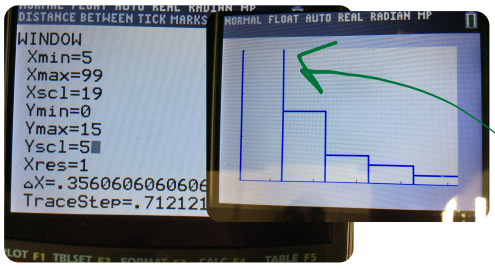
3) Create a frequency distribution for the data Using 5 intervals

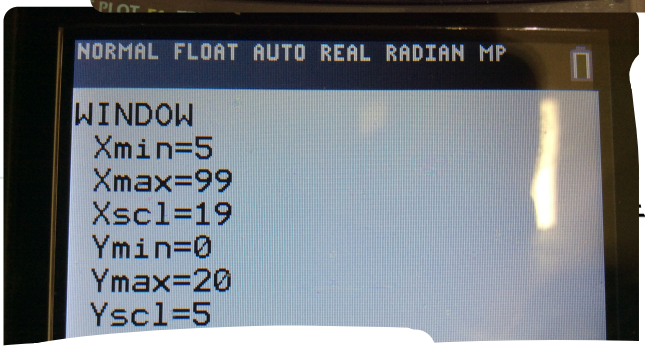
INTERVAL	FREQUENCY
MIN → 5 – 23	16
24 – 42	8
43 – 61	3
62 – 80	2
81 – 99	1

4) Create a histogram and a cumulative frequency histogram for the data:





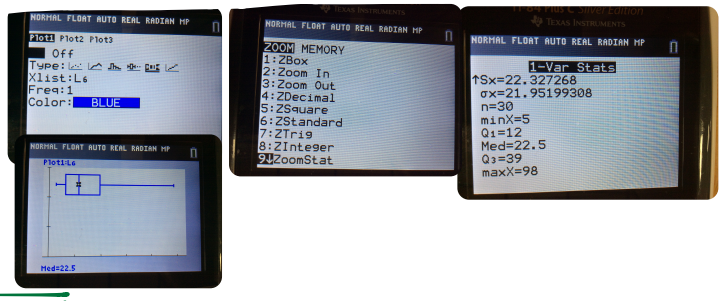


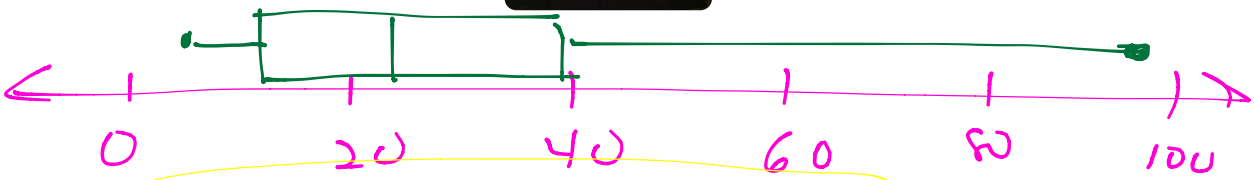


NO GOOD because it doesn't fit on the screen

Calculate the five number summary for each data set. Identify if the data set contains any outliers and construct a box and whisker plot to display the data.

MIN = 5
Q1 = 12
MED = 22.5
Q3 = 39
MAX = 98





Calculate the upper fence (the upper boundary for outliers)

$Q3 + 1.5(IQ) = 39 + 1.5(27) = 79.5$

Are there any values above the upper fence (i.e. outliers)?

80, 98

IQ = Q3 − Q1
39 − 12
27

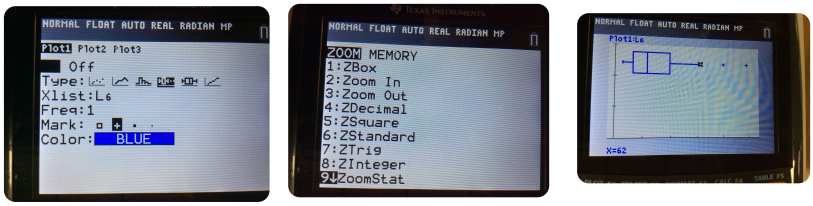
Calculate the lower fence (the lower boundary for outliers)

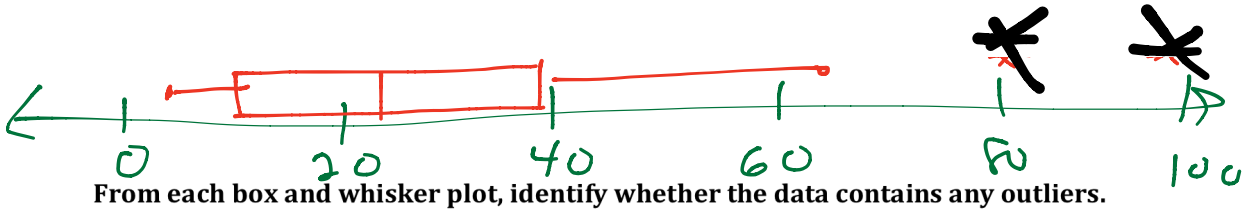
$Q1 - 1.5(IQ) = 12 - 1.5(27) = -28.5$

Are there any values below the lower fence (i.e. outliers)?

NONE

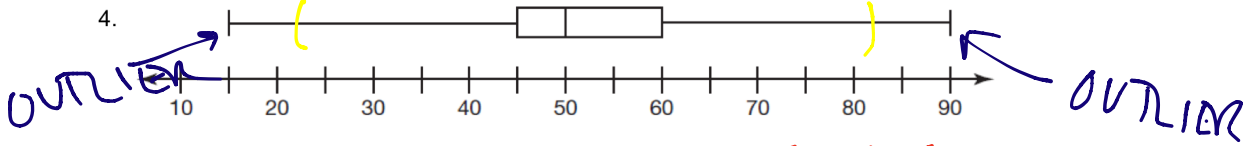
, find any outliers that may exist and then draw a modified boxplot.





From each box and whisker plot, identify whether the data contains any outliers.

4.

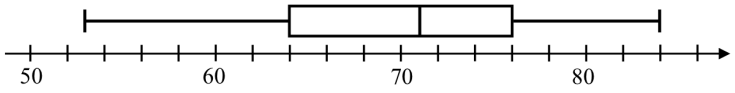


$IQ = Q3 - Q1 = 60 - 45 = 15$

Lower Fence $= Q1 - 1.5IQ = 45 - 1.5(15)$ 22.5

Upper Fence $= Q3 + 1.5IQ = 60 + 1.5(15)$ 82.5

***Exercise* #5:** Twenty of Mr. Greco's physics students recently took a quiz. The results of this quiz are shown in the following box-and-whiskers diagram. Assume that all scores are whole numbers.



(a) What was the median score on Mr. Greco's math quiz?

71

(b) What was the range of the scores on Mr. Greco's math quiz?

$84 - 53 = 29$

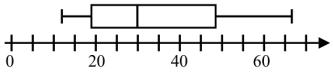
(c) What score was greater than or equal to 75% of all other scores on this quiz?

$Q3 = 76$

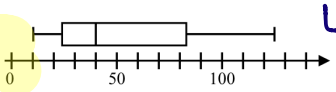
(d) Mr. Greco regularly sets the passing grade on his quizzes to be the score of the lower quartile. What is the passing grade on this quiz?

64

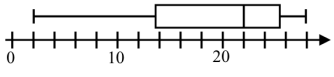
***Exercise* #6:** Which of the following box-and-whiskers diagram shows a data set with the greatest median?

(1) 

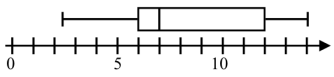
30

(2) 

40

(3) 

22

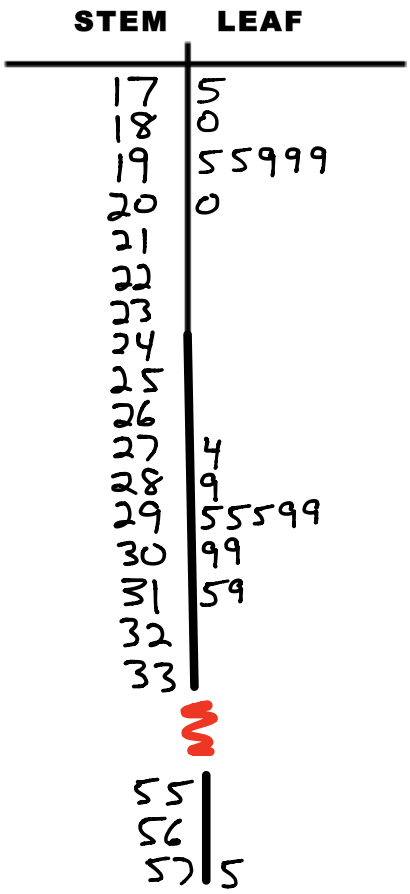
(4) 

7

The following data represents the prices of 20 boxes of cookies at a supermarket:

$ 2.89	$ 2.95	$ 1.75	$ 3.15
$ 2.99	$ 3.19	$ 2.95	$ 2.99
$ 1.95	$ 3.09	$ 1.95	$ 3.09
$ 1.99	$ 1.99	$ 1.99	$ 2.00
$ 2.74	$ 1.80	$ 2.95	$ 5.75

(a) Create a stem and leaf plot for the data.



Key
57/5 =
$5.75