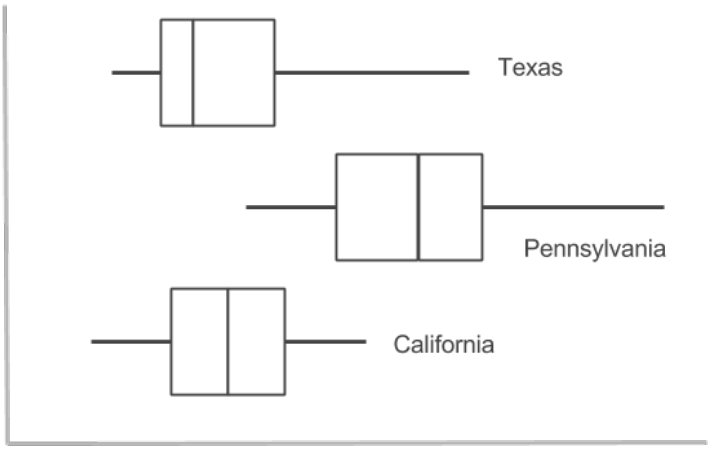
Math 13 - Homework 4

Name: _____ **Class Number:** _____

1) Below are sketches of histograms for three sets of numbers.

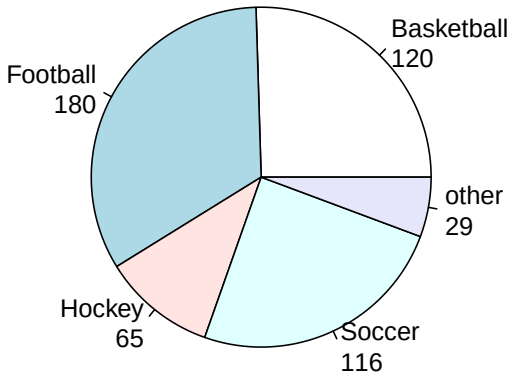
a. In scrambled oreder, the averages are 40, 50, 60. Match the histograms with the averages.
b. In which histogram the median is less than the average?
c. In which histogram the median is about the average?
d. In which histogram the median is bigger than the average?

2) Consumer Reports rated automobile insurance companies and listed annual premiums for top-rated companies in several states. The figure below shows box plots for annual premiums for urban customers in three states.



a. Which state has the lowest premium?
b. Which state has the highest premium?
c. Which state has the smallest median premium?
d. Which state has the highest median premium?
e. Which state has the smallest range of premiums?
f. Which states has the largest interquartile range?
g. Which state has the smallest interquartile range?
h. Which state seems to have a symmetric distribution?

3) A survey of 510 teenagers was taken to see which sport was their favorite to watch on television. The pie chart below displays the results. Choose the correct proportions of teenagers corresponding to the pie chart values (Explain your answer).



- Basketball, 25%; football, 33%; hockey, 11%; soccer, 24%; other, 7%
- Basketball, 33.33%; football, 25.49%; hockey,5.69%; soccer, 24.71%; other, 10.78%
- Basketball, 26.49%; football, 33.33%; hockey, 10.88%; soccer, 23.71%; other, 5.69%
- Basketball, 25.49%; football, 33.33%; hockey, 10.78%; soccer, 24.71%; other, 5.69%
- None of the above

4) Here are the points scored by the Oakland Raiders in season 2014-2015 (16 matches):

```
[1] 14 14  9 14 28 13 13 24 17  6 24  0 24 13 26 14
```

a. Find the minimun value:
b. Find the maximum value:
c. Find the median:
d. Calculate the mode:
e. Calculate the range:
f. Calculate Q_1 (the 1st quartile):
g. Calculate Q_3 (the 3rd quartile):
h. Calculate the Interquartile Range (IQR):

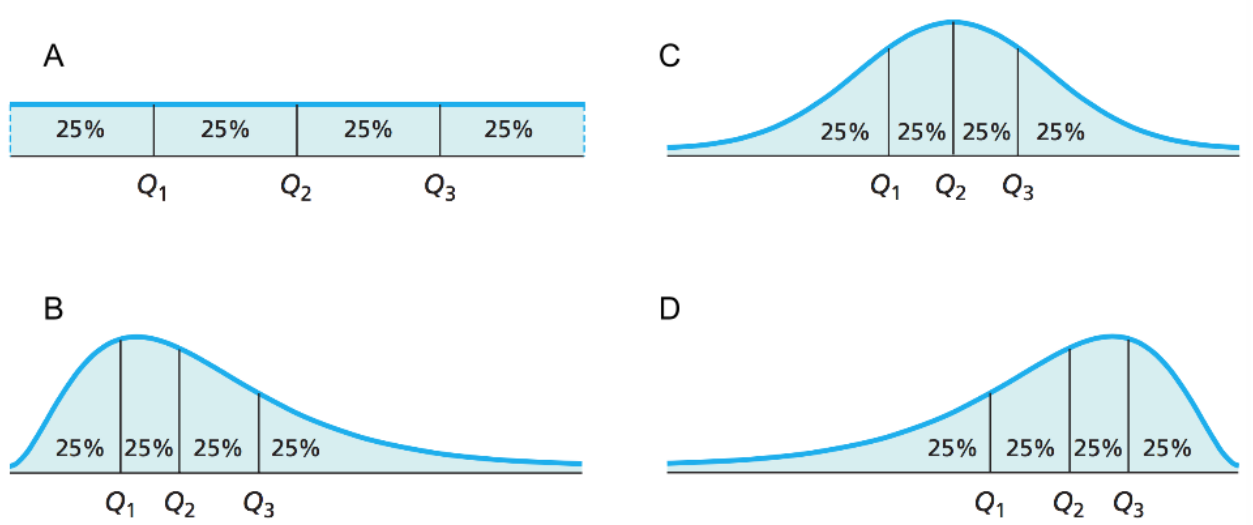
5) With the results obtained in the previous question, draw a box plot of the data.

6) The following relative frequency table is obtained from a data set of the number of fire emergency calls received each month at a certain fire station:

Value	Relative Frequency
0	0.05
1	0.08
2	0.12
3	0.14
4	0.16
5	0.20
6	0.15
7	0.10

- What proportion of months has fewer than 2 emergency calls?
- What proportion of months has more than 5 emergency calls?
- What proportion of monts has between 3 and 5 emergency calls
- Is this data set symmetric?

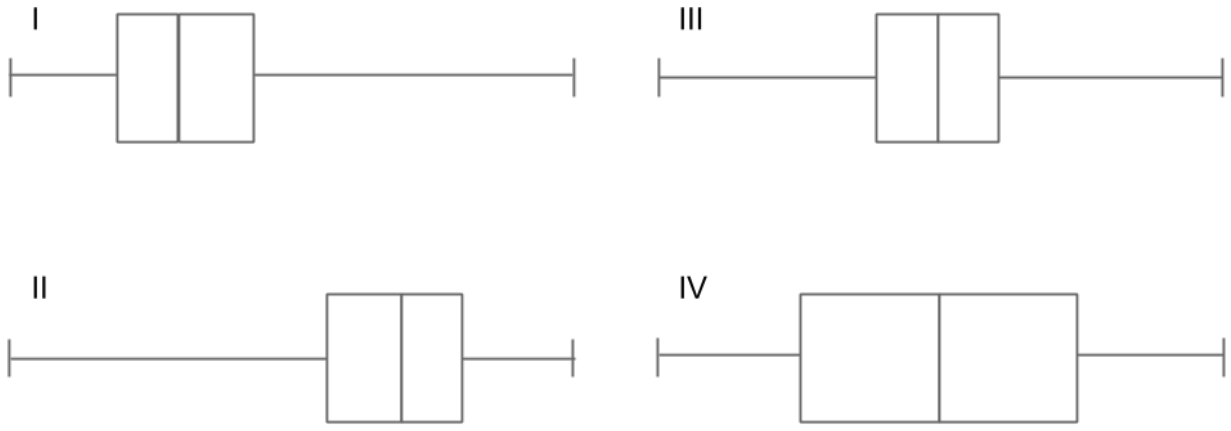
7) Below are sketches of four histograms.



Match each histogram with its corresponding shape:

- Bell shaped
- Right Skewed
- Uniform
- Left Skewed

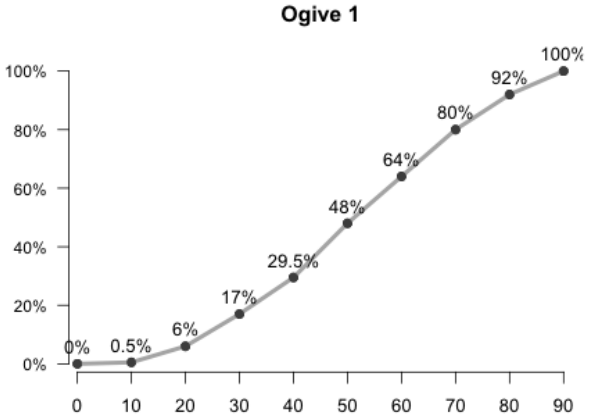
8) Below are sketches of four boxplots. Each plot correspond to one of the histograms in the previous question. Match the boxplots with their hisotgrams.

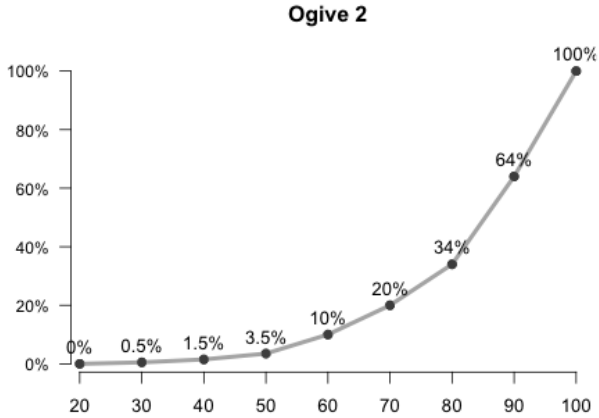


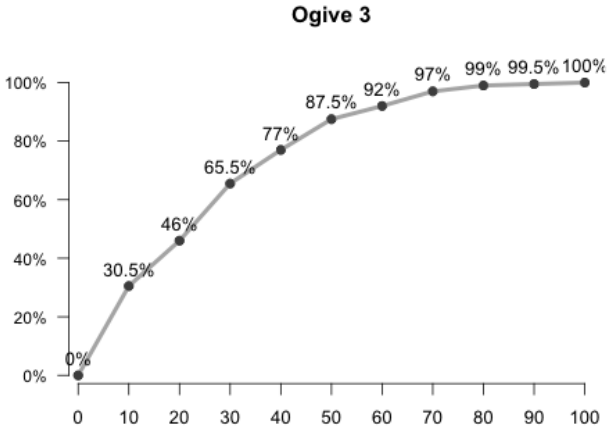
- Boxplot I:

- Boxplot II:
- Boxplot III:
- Boxplot IV:

9) The following ogives come from different distributions of 200 numbers between 0 and 100. Yhe labels on each point give the cumulative relative frequency (in percentage) of data.







- Which distribution seems to be skewed to the right?
- Which distribution seems to be skewed to the left?
- Which distribution seems to be bell shaped?
- In which distribution does the most data fall below 40?
- In which distribution does the most data fall above 20?
- In which distribution is the amount of data below 40 closest to the amount of data above 60?