Worksheet 2

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1. The ages (in years) of a sample of 25 teachers are as follows:

47	21	37	53	28
40	30	32	34	26
34	24	24	35	45
38	35	28	43	45
30	45	31	41	56

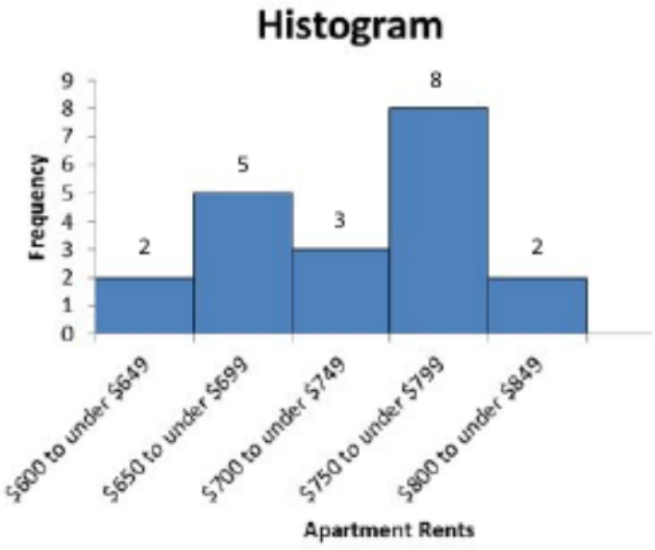
   a. How many classes does Sturges' formula suggest?

   b. Develop a grouped frequency distribution, showing the frequencies, relative frequencies, percent frequencies and cumulative frequencies.

   c. Draw a histogram and an ogive based on the frequency distribution.

(extra space for question 1)

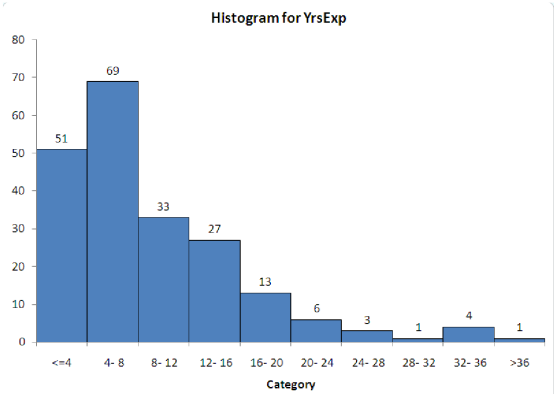
2. The following histogram shows the distribution of the monthly rental for a random sample of one-bedroom apartments in York, Pennsylvania.

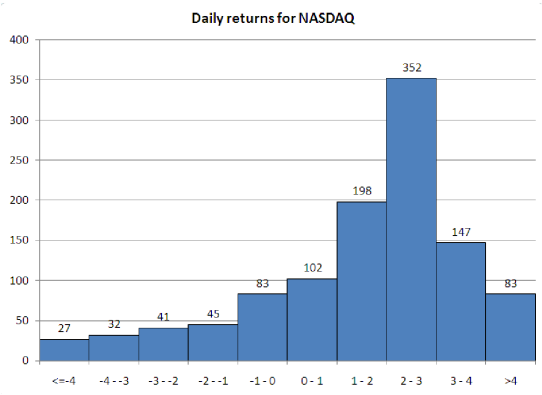


a. What is the total number of apartments in this sample, and what is the percentage of monthly rents that are \$750 and above? If we rank the observations from low to high, what can you say about the range of 8th ranked observation?

b. Identify the shape of below histograms [1]

[1] Graphs are from http://citadel.sjfc.edu/faculty/kgreen/MSTI130/MSTI130Text/Text_Fall_2014su28.html


Histogram for YrsExp
80
70
60
50
40
30
20
10
0
51
69
33
27
13
6
3
1
4
1
<=4
4- 8
8- 12
12- 16
16- 20
20- 24
24- 28
28- 32
32- 36
>36
Category


Daily returns for NASDAQ
400
350
300
250
200
150
100
50
0
27
32
41
45
83
102
198
352
147
83
<=-4
-4 - -3
-3 - -2
-2 - -1
-1 - 0
0 - 1
1 - 2
2 - 3
3 - 4
>4

3. The U.S. National Debt over the span of a decade from 1991 to 2001 is given in the following table:

Year	Debt (in T)
1991	7.3
1992	7.9
1993	8.3
1994	8.6
1995	8.9
1996	9.1
1997	9.2
1998	9.3
1999	9.2
2000	9.0
2001	8.9

a. Is this an example of time series data or cross sectional data?

b. Make an appropriate plot for this data.

c. What can you conclude from this data?

4. The following data has mean income and housing for 10 cities in Florida. Values are in dollars ($) and rounded to the nearest thousand.

City	Income ($\boldsymbol{x}$)	Housing (y)
A	26	109
B	29	97
C	25	115
D	28	99
E	38	122
F	32	145
G	25	100
H	22	76
I	29	113
J	42	144

   a. What would be an appropriate diagram representing the relationship between Income (x) and Housing (y)?

   b. Without looking at the graph or calculating a statistic, how would you describe the relationship between the income (x) and housing (y)? Now make the graph and validate what you were expecting from the graph.