Practice Questions

Chapter 2

1. A Survey was conducted to check the relation between the brand name and the level of shelf they are sold. It is noted that 20% of all products were brand A which are sold at top shelf.

	A	B
Top	400	300
Middle	800	500

$\frac{20}{100} \times Total = 400$

$T = \frac{400 \times 100}{20} = 2000$

a) Fill the Table.

b) How many of them are brand A? $400 + 800 = 1200$

$400 + 300 + 800 = 1500$

c) How many of them are sold at middle shelf?

$2000 - 1500 = 500$

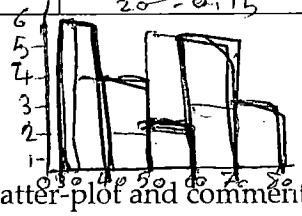
2.

Class	Cumulative Frequency	Frequency	Relative Frequency	Percentage
30 but less than 40	6	6	$\frac{6}{20} = 0.3$	$0.3 \times 100 = 30\%$
40 but less than 50	10	$= 4$	$\frac{4}{20} = 0.2$	$0.2 \times 100 = 20\%$
50 but less than 60	12	2	$\frac{2}{20} = 0.1$	$0.1 \times 100 = 10\%$
60 but less than 70	17	5	$\frac{5}{20} = 0.25$	$0.25 \times 100 = 25\%$
70 but less than 80	20	3	$\frac{3}{20} = 0.15$	$0.15 \times 100 = 15\%$

20

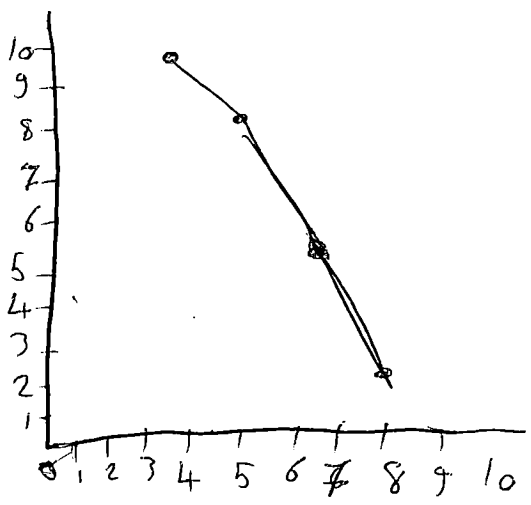
a. Fill the table above

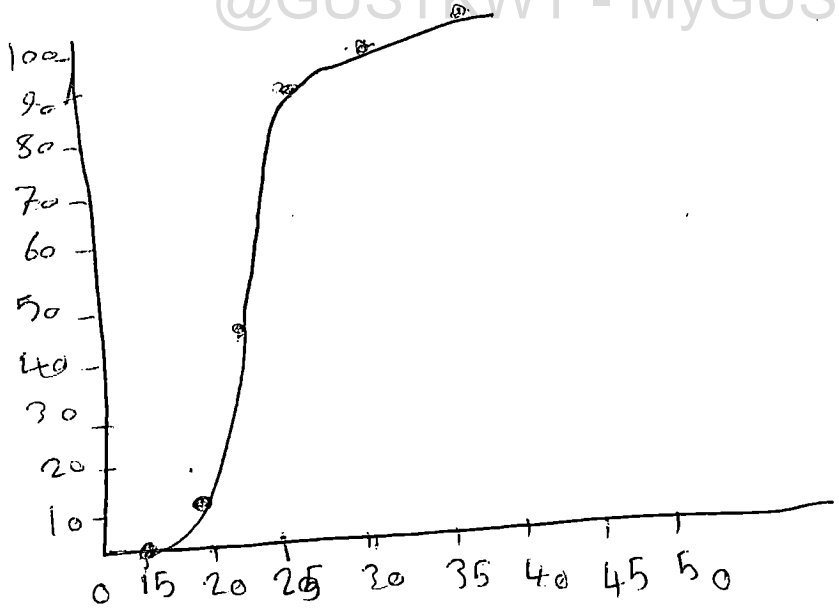
b. Draw a histogram for frequency



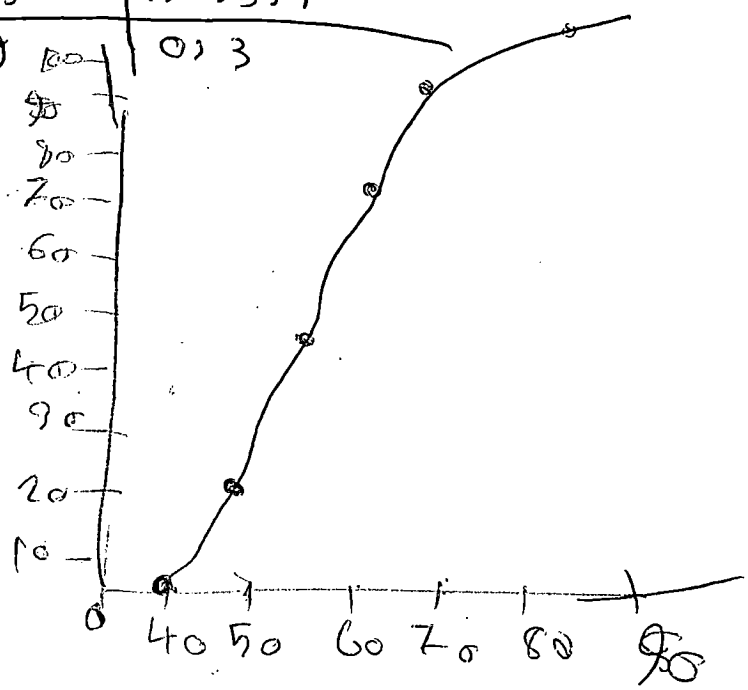
3. Given the price-demand relation, make the scatter-plot and comment on the graph.

Price	Demand
5	10
6	8
7	5
8	2

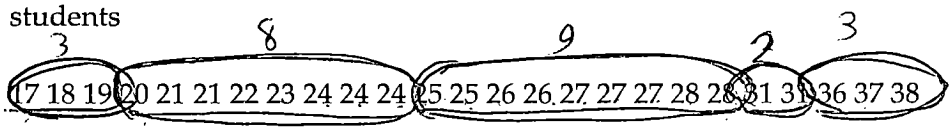




Stem	Leaf
4	2, 8
5	5, 7
6	4, 5, 7, 7, 8
7	0, 4, 4, 6, 7
8	1, 2, 5, 7
9	0, 3



4. The ordered array below represents the ages of 25 computer science graduating students



a. Construct the stem-and-leaf display for this data.
b. Complete the following table and plot a percent frequency histogram for this data

Class	Frequency	Relative frequency	Percent frequency	Cumulative percent frequency
15 but less than 20	3	$\frac{3}{25}=0.12$	$0.12\times100=12\%$	12%
20 but less than 25	8	$\frac{8}{25}=0.32$	$0.32\times100=32$	44
25 but less than 30	9	$\frac{9}{25}=0.36$	$0.36\times100=36$	80
30 but less than 35	2	$\frac{2}{25}=0.08$	$0.08\times100=8$	88
35 but less than 40	3	$\frac{3}{25}=0.12$	$0.12\times100=12$	100
	25			

c. Plot a cumulative percentage polygon (OGIVE)

5. Below is a list of scores from a basic calculus quiz for 20 students:
87, 42, 57, 48, 65, 81, 90, 76, 67, 82, 74, 93, 55, 68, 70, 85, 77, 74, 67, 64

a. Construct the stem-and-leaf display for this data.
b. Compute the percent frequency and plot a percent frequency histogram for this data (you may use the following table for questions b and c).

Class	Frequency	Relative frequency	Percent frequency	Cumulative percent frequency
40-49	2	$\frac{2}{20}=0.1$	$0.1\times100=10$	10
50-59	2	$\frac{2}{20}=0.1$	$0.1\times100=10$	20
60-69	5	$\frac{5}{20}=0.25$	$0.25\times100=25$	45
70-79	5	$\frac{5}{20}=0.25$	$0.25\times100=25$	70
80-89	4	$\frac{4}{20}=0.2$	$0.2\times100=20$	90
90-99	2	$\frac{2}{20}=0.1$	$0.1\times100=10$	100
	20			

c. Plot a cumulative percentage polygon (ogive).

6. The following are the duration in minutes of a sample of long-distance phone calls made within the continental United States reported by one long-distance carrier.

Time (in Minutes)	Relative Frequency
0 but less than 5	0.37
5 but less than 10	0.24
10 but less than 15	0.15
15 but less than 20	0.17
20 but less than 25	0.07

a. If 100 calls were randomly sampled, how many calls lasted under 10 minutes?
b. If 100 calls were randomly sampled, how many calls lasted 15 minutes or longer?
c. If 100 calls were randomly sampled, how many of them would have lasted at least 10 minutes but less than 20 minutes

(a) $0.37 + 0.24 = 0.61$ / $0.61 \times 100 = 61$ calls

(b) $0.17 + 0.07 = 0.24$ / $0.24 \times 100 = 24$ calls

(c) $0.15 + 0.17 = 0.32$ / $0.32 \times 100 = 32$ calls