

# Quantitative Methods – I

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## Practice 1.2

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For any clarification:

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Ex. 2 – Arrange the following data of blood type into a frequency distribution table:

A+ AB- 0+ 0+ 0+ AB- 0+ A+ 0- 0- 0+ B- A+ 0- A+

A- AB+ B- B- B+ 0+ A- 0+ AB- A- A+ B- B- AB- A+

Calculate the relative frequencies, the cumulative frequencies, the percentage frequencies and the cumulative relative frequencies.

Choose the right chart for your data and draw the graph.

Ex. 2 – Arrange the following data of blood type into a frequency distribution table:

A+ AB- 0+ 0+ 0+ AB- 0+ A+ 0- 0- 0+ B- A+ 0- A+  
 A- AB+ B- B- B+ 0+ A- 0+ AB- A- A+ B- B- AB- A+

Calculate the relative frequencies, the cumulative frequencies, the percentage frequencies and the cumulative relative frequencies.

Choose the right chart for your data and draw the graph.

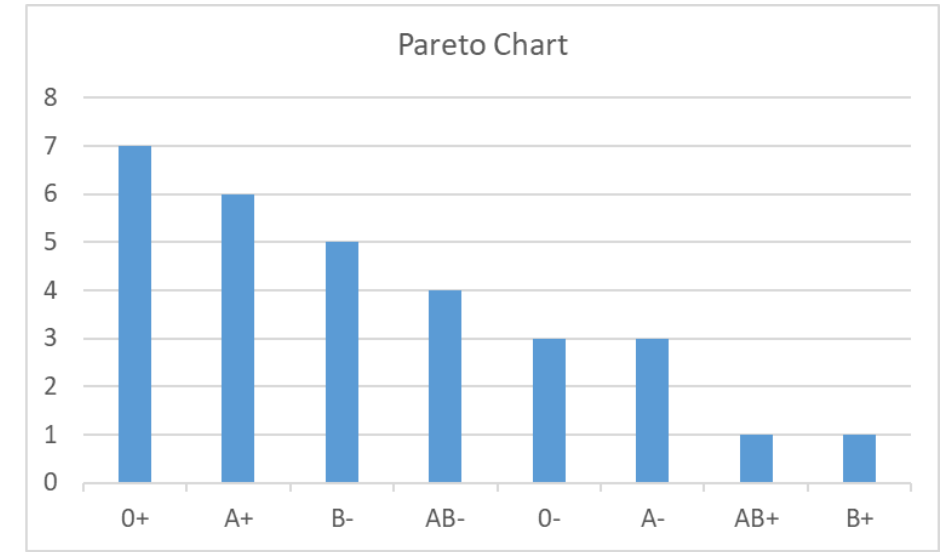
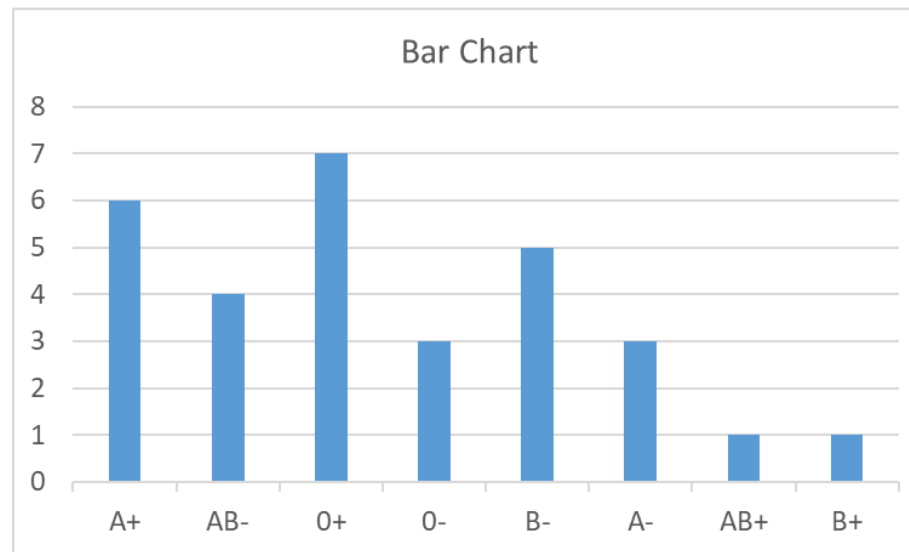
X	fi	rfi	Percentage	Cum fi	Cum rfi
A+	6	0,20	20%	6	0,20
AB-	4	0,13	13%	10	0,33
0+	7	0,23	23%	17	0,57
0-	3	0,10	10%	20	0,67
B-	5	0,17	17%	25	0,83
A-	3	0,10	10%	28	0,93
AB+	1	0,03	3%	29	0,97
B+	1	0,03	3%	30	1,00
N	30	1,00	100%		

Ex. 2 – Arrange the following data of blood type into a frequency distribution table:

A+ AB- 0+ 0+ 0+ AB- 0+ A+ 0- 0- 0+ B- A+ 0- A+  
 A- AB+ B- B- B+ 0+ A- 0+ AB- A- A+ B- B- AB- A+

Choose the right chart for your data and draw the graph.

X	fi
A+	6
AB-	4
0+	7
0-	3
B-	5
A-	3
AB+	1
B+	1
<b>N</b>	<b>30</b>



Ex. 3 – Arrange the following data into a frequency distribution table:

4	1	4	3	2	3	2	0	2	0
4	5	5	2	5	5	5	2	5	0

Calculate the relative frequencies, the cumulative frequencies, the percentage frequencies and the cumulative relative frequencies.

Choose the right chart for your data and draw the graph.

Ex. 3 – Arrange the following data into a frequency distribution table:

4	1	4	3	2	3	2	0	2	0
4	5	5	2	5	5	5	2	5	0

Calculate the relative frequencies, the cumulative frequencies, the percentage frequencies and the cumulative relative frequencies.

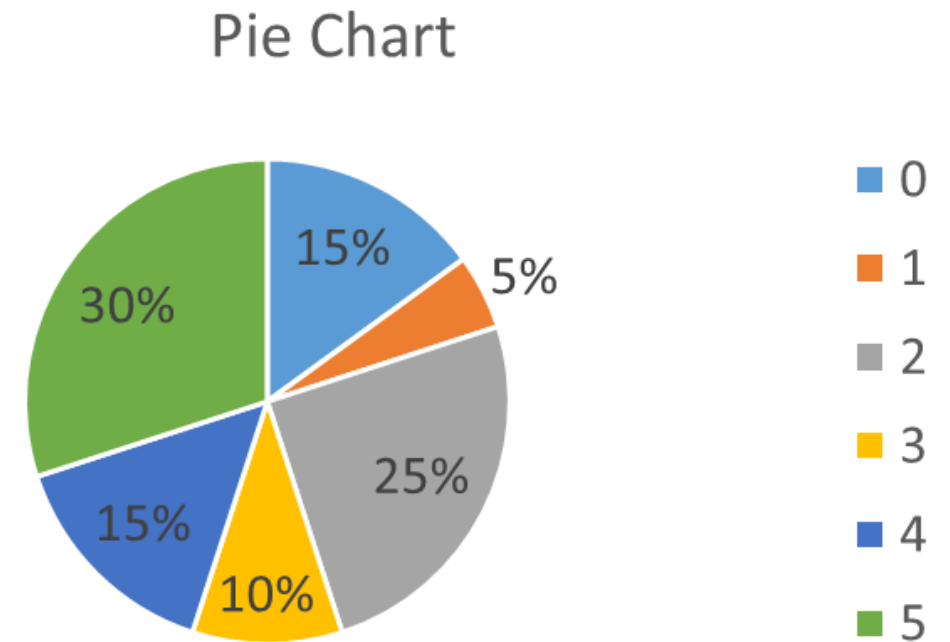
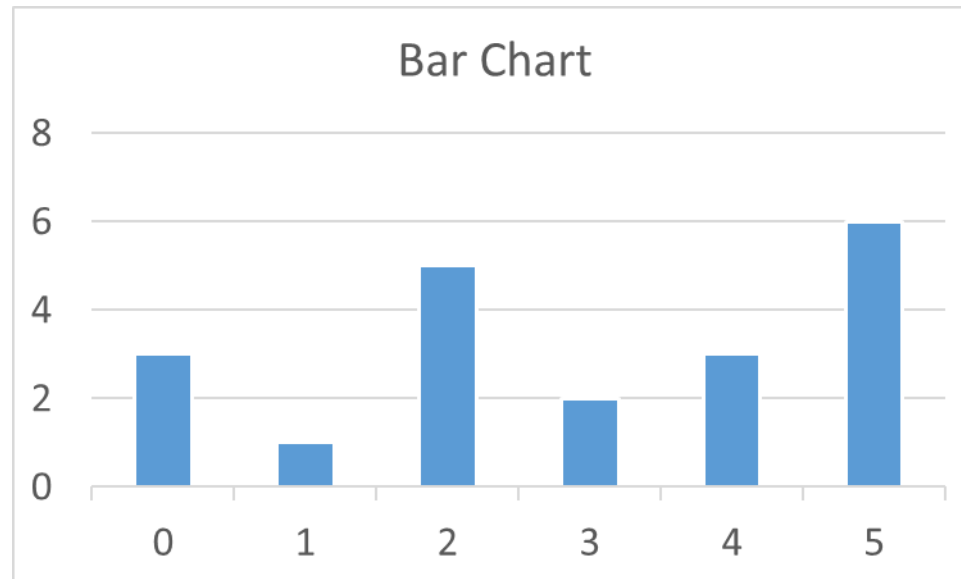
X	fi	rfi	Percentage	Cum fi	Cum rfi
0	3	0,15	15%	3	0,15
1	1	0,05	5%	4	0,20
2	5	0,25	25%	9	0,45
3	2	0,10	10%	11	0,55
4	3	0,15	15%	14	0,70
5	6	0,30	30%	20	1,00
N	20	1,00	100%		

Ex. 3 – Arrange the following data into a frequency distribution table:

4	1	4	3	2	3	2	0	2	0
4	5	5	2	5	5	5	2	5	0

Choose the right chart for your data and draw the graph.

X	fi
0	3
1	1
2	5
3	2
4	3
5	6
N	20



Ex. 4 – Arrange the following data into a frequency distribution table:

0      2      4      7      4      5      6      7      1      0

Calculate the cumulative frequencies, the relative frequencies, the cumulative relative frequencies, the percentage frequencies and the cumulative percentage frequencies.



Ex. 4 – Arrange the following data into a frequency distribution table:

0      2      4      7      4      5      6      7      1      0

Calculate the cumulative frequencies, the relative frequencies, the cumulative relative frequencies, the percentage frequencies and the cumulative percentage frequencies.

X	abs.freq	cum.freq	rel.freq	cum.rel.freq	perc	perc.cum
0	2	2	0.2	0.2	20	20
1	1	3	0.1	0.3	10	30
2	1	4	0.1	0.4	10	40
4	2	6	0.2	0.6	20	60
5	1	7	0.1	0.7	10	70
6	1	8	0.1	0.8	10	80
7	2	10	0.2	1.0	20	100
Sum	10					

Ex. 4.2

Convert the following data into grouped frequency distribution:

3, 4, 5, 6, 6, 5, 4, 3, 2, 2, 2, 1, 7, 7, 8, 2

using the following classes: 0 | -3, 4 | -7, 7 | -9

Ex. 4.2

Convert the following data into grouped frequency distribution:

3, 4, 5, 6, 6, 5, 4, 3, 2, 2, 2, 1, 7, 7, 8, 2

using the following classes: 0 | -3, 4 | -7, 7 | -9

Class interval	Frequency
0   -3	7
4   -7	6
7   -9	3

Ex. 5 – Arrange the following data into a frequency distribution using the following classes:

0  – 20    20  – 50    50  – 75    75  – 150    150  – 200									
86,00 €	133,00 €	144,00 €	80,00 €	43,00 €	58,00 €	21,00 €	130,00 €	138,00 €	93,00 €
66,00 €	24,00 €	111,00 €	115,00 €	28,00 €	133,00 €	19,00 €	31,00 €	78,00 €	30,00 €
138,00 €	129,00 €	129,00 €	122,00 €	15,00 €	26,00 €	66,00 €	120,00 €	146,00 €	30,00 €
101,00 €	155,00 €	16,00 €	81,00 €	93,00 €	19,00 €	155,00 €	38,00 €	125,00 €	74,00 €

Ex. 5 – Arrange the following data into a frequency distribution using the following classes:

0| – 20    20| – 50    50| – 75    75| – 150    150| – 200

86,00 €	133,00 €	144,00 €	80,00 €	43,00 €	58,00 €	21,00 €	130,00 €	138,00 €	93,00 €
66,00 €	24,00 €	111,00 €	115,00 €	28,00 €	133,00 €	19,00 €	31,00 €	78,00 €	30,00 €
138,00 €	129,00 €	129,00 €	122,00 €	15,00 €	26,00 €	66,00 €	120,00 €	146,00 €	30,00 €
101,00 €	155,00 €	16,00 €	81,00 €	93,00 €	19,00 €	155,00 €	38,00 €	125,00 €	74,00 €

X	fi	rfi	Percentage	Cum fi	Cum rfi
0  -20	4	0,10	10%	4	0,10
20  -50	9	0,23	23%	13	0,33
50  -75	4	0,10	10%	17	0,43
75  -150	21	0,53	53%	38	0,95
150  -200	2	0,05	5%	40	1,00
N	40	1,00	100%		

Ex. 5 – Arrange the following data into a frequency distribution using the following classes:

0  – 20    20  – 50    50  – 75    75  – 150    150  – 200									
86,00 €	133,00 €	144,00 €	80,00 €	43,00 €	58,00 €	21,00 €	130,00 €	138,00 €	93,00 €
66,00 €	24,00 €	111,00 €	115,00 €	28,00 €	133,00 €	19,00 €	31,00 €	78,00 €	30,00 €
138,00 €	129,00 €	129,00 €	122,00 €	15,00 €	26,00 €	66,00 €	120,00 €	146,00 €	30,00 €
101,00 €	155,00 €	16,00 €	81,00 €	93,00 €	19,00 €	155,00 €	38,00 €	125,00 €	74,00 €

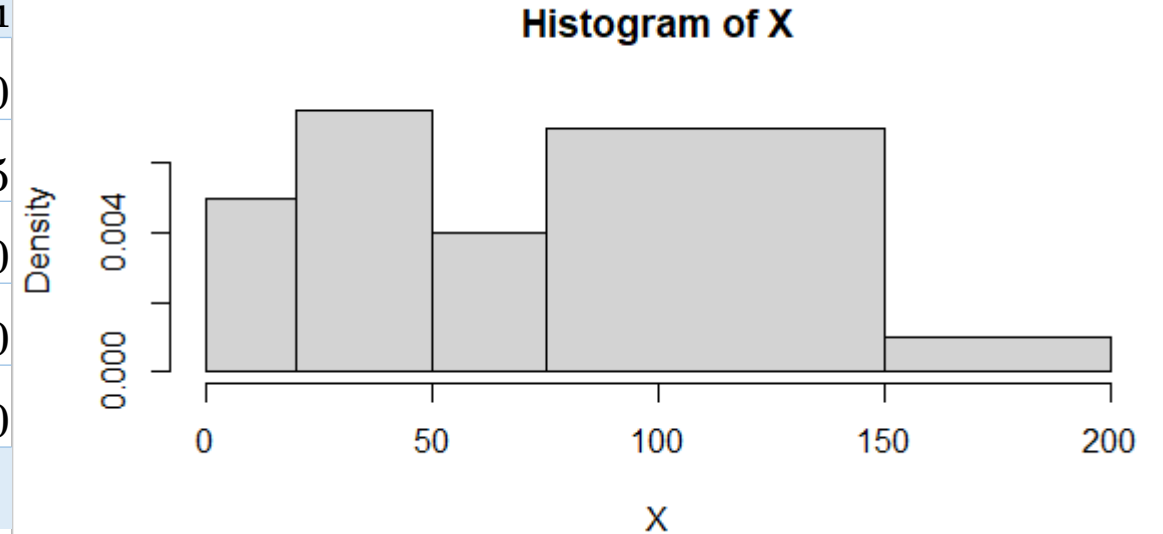
Draw the histogram.

Ex. 5 – Arrange the following data into a frequency distribution using the following classes:

0| – 20    20| – 50    50| – 75    75| – 150    150| – 200

86,00 €	133,00 €	144,00 €	80,00 €	43,00 €	58,00 €	21,00 €	130,00 €	138,00 €	93,00 €
66,00 €	24,00 €	111,00 €	115,00 €	28,00 €	133,00 €	19,00 €	31,00 €	78,00 €	30,00 €
138,00 €	129,00 €	129,00 €	122,00 €	15,00 €	26,00 €	66,00 €	120,00 €	146,00 €	30,00 €
101,00 €	155,00 €	16,00 €	81,00 €	93,00 €	19,00 €	155,00 €	38,00 €	125,00 €	74,00 €

X	fi	rfi	Width=wi	Density=hi
0  -20	4	0,10	20	0,0050
20  -50	9	0,23	30	0,0075
50  -75	4	0,10	25	0,0040
75  -150	21	0,53	75	0,0070
150  -200	2	0,05	50	0,0010
N	40	1,00		



Ex. 6 – Arrange the following data into a frequency distribution using the following classes:

		0  – 25	25  – 50	50  – 100	100  – 150	150  – 200			
86,00 €	133,00 €	144,00 €	80,00 €	43,00 €	58,00 €	21,00 €	130,00 €	138,00 €	93,00 €
66,00 €	24,00 €	111,00 €	115,00 €	28,00 €	133,00 €	19,00 €	31,00 €	78,00 €	30,00 €
138,00 €	129,00 €	129,00 €	122,00 €	15,00 €	26,00 €	66,00 €	120,00 €	146,00 €	30,00 €
101,00 €	155,00 €	16,00 €	81,00 €	93,00 €	19,00 €	155,00 €	38,00 €	125,00 €	74,00 €



Ex. 6 – Arrange the following data into a frequency distribution using the following classes:

0  – 25		25  – 50		50  – 100		100  – 150		150  – 200	
86,00 €	133,00 €	144,00 €	80,00 €	43,00 €	58,00 €	21,00 €	130,00 €	138,00 €	93,00 €
66,00 €	24,00 €	111,00 €	115,00 €	28,00 €	133,00 €	19,00 €	31,00 €	78,00 €	30,00 €
138,00 €	129,00 €	129,00 €	122,00 €	15,00 €	26,00 €	66,00 €	120,00 €	146,00 €	30,00 €
101,00 €	155,00 €	16,00 €	81,00 €	93,00 €	19,00 €	155,00 €	38,00 €	125,00 €	74,00 €

X	fi	rfi	Percentage	Cum fi	Cum rfi
0  -25	6	0,15	15%	6	0,15
25  -50	7	0,18	18%	13	0,33
50  -100	10	0,25	25%	23	0,58
100  -150	15	0,38	38%	38	0,95
150  -200	2	0,05	5%	40	1,00
N	40	1,00	100%		

Ex. 6 – Arrange the following data into a frequency distribution using the following classes:

0  – 25		25  – 50		50  – 100		100  – 150		150  – 200	
86,00 €	133,00 €	144,00 €	80,00 €	43,00 €	58,00 €	21,00 €	130,00 €	138,00 €	93,00 €
66,00 €	24,00 €	111,00 €	115,00 €	28,00 €	133,00 €	19,00 €	31,00 €	78,00 €	30,00 €
138,00 €	129,00 €	129,00 €	122,00 €	15,00 €	26,00 €	66,00 €	120,00 €	146,00 €	30,00 €
101,00 €	155,00 €	16,00 €	81,00 €	93,00 €	19,00 €	155,00 €	38,00 €	125,00 €	74,00 €

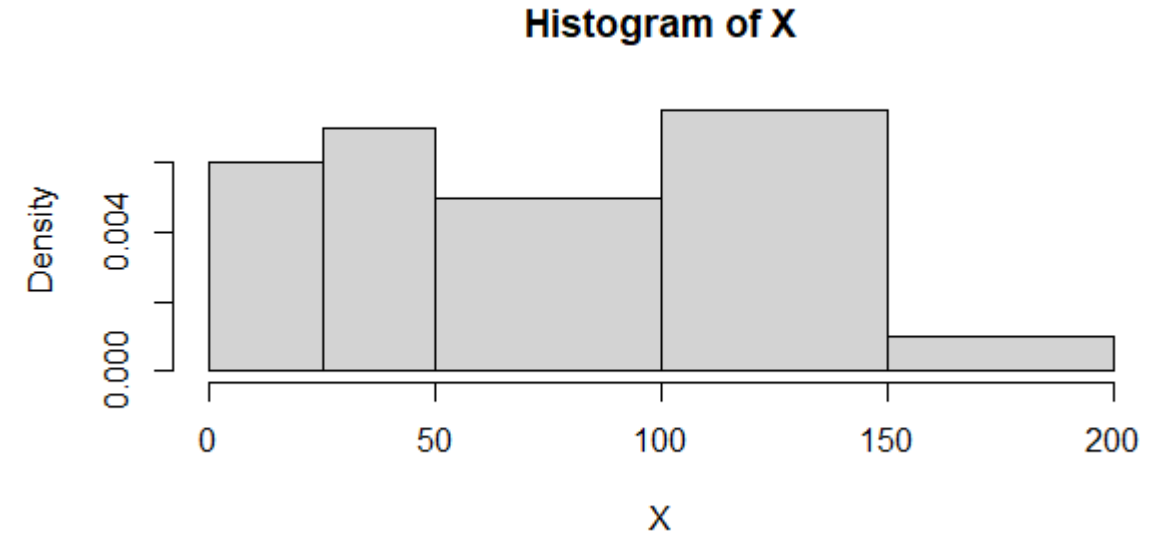
Draw the histogram.

Ex. 6 – Arrange the following data into a frequency distribution using the following classes:

0| – 25    25| – 50    50| – 100    100| – 150    150| – 200

86,00 €	133,00 €	144,00 €	80,00 €	43,00 €	58,00 €	21,00 €	130,00 €	138,00 €	93,00 €
66,00 €	24,00 €	111,00 €	115,00 €	28,00 €	133,00 €	19,00 €	31,00 €	78,00 €	30,00 €
138,00 €	129,00 €	129,00 €	122,00 €	15,00 €	26,00 €	66,00 €	120,00 €	146,00 €	30,00 €
101,00 €	155,00 €	16,00 €	81,00 €	93,00 €	19,00 €	155,00 €	38,00 €	125,00 €	74,00 €

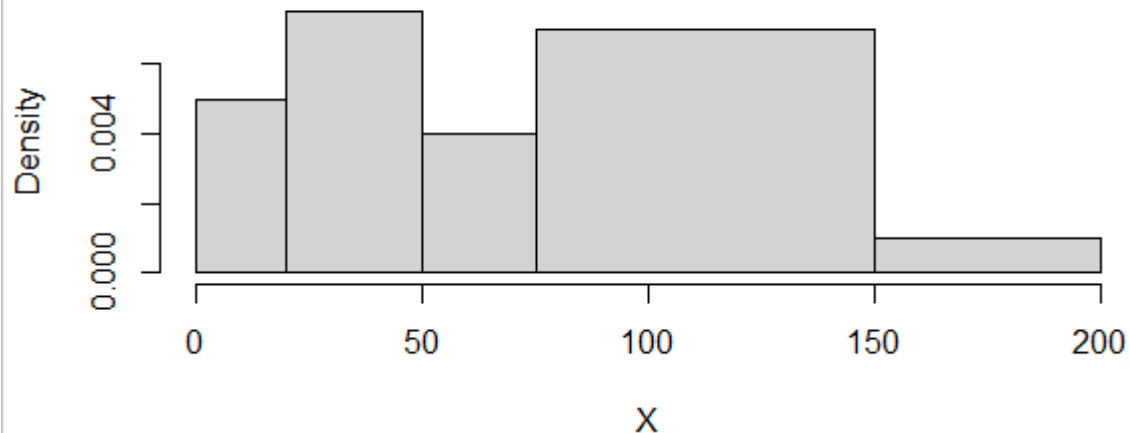
X	fi	rfi	Width=wi	Density=hi
0  -25	6	0,15	25	0,0060
25  -50	7	0,18	25	0,0070
50  -100	10	0,25	50	0,0050
100  -150	15	0,38	50	0,0075
150  -200	2	0,05	50	0,0010
N	40	1,00		



Ex. 5

X	fi	rfi	Width=wi	Density=hi
0   -20	4	0,10	20	0,0050
20   -50	9	0,23	30	0,0075
50   -75	4	0,10	25	0,0040
75   -150	21	0,53	75	0,0070
150   -200	2	0,05	50	0,0010
N	40	1,00		

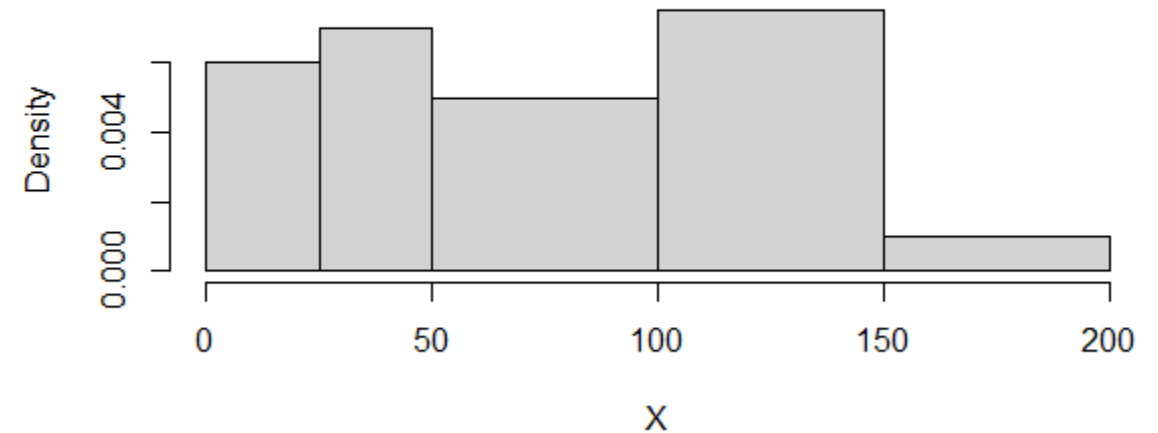
Histogram of X



Ex. 6

X	fi	rfi	Width=wi	Density=hi
0   -25	6	0,15	25	0,0060
25   -50	7	0,18	25	0,0070
50   -100	10	0,25	50	0,0050
100   -150	15	0,38	50	0,0075
150   -200	2	0,05	50	0,0010
N	40	1,00		

Histogram of X



Same data, different histograms