

Data Viz, HW2, part 2

2] Boxplot.

-5, 12, 14, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24, 24, 28, 29, 30, 35

of data points: 19

$$Q_2 = 20$$

$$Q_1 = \frac{15 + 16}{2} = 15.5$$

$$Q_3 = \frac{23 + 24}{2} = 23.5$$

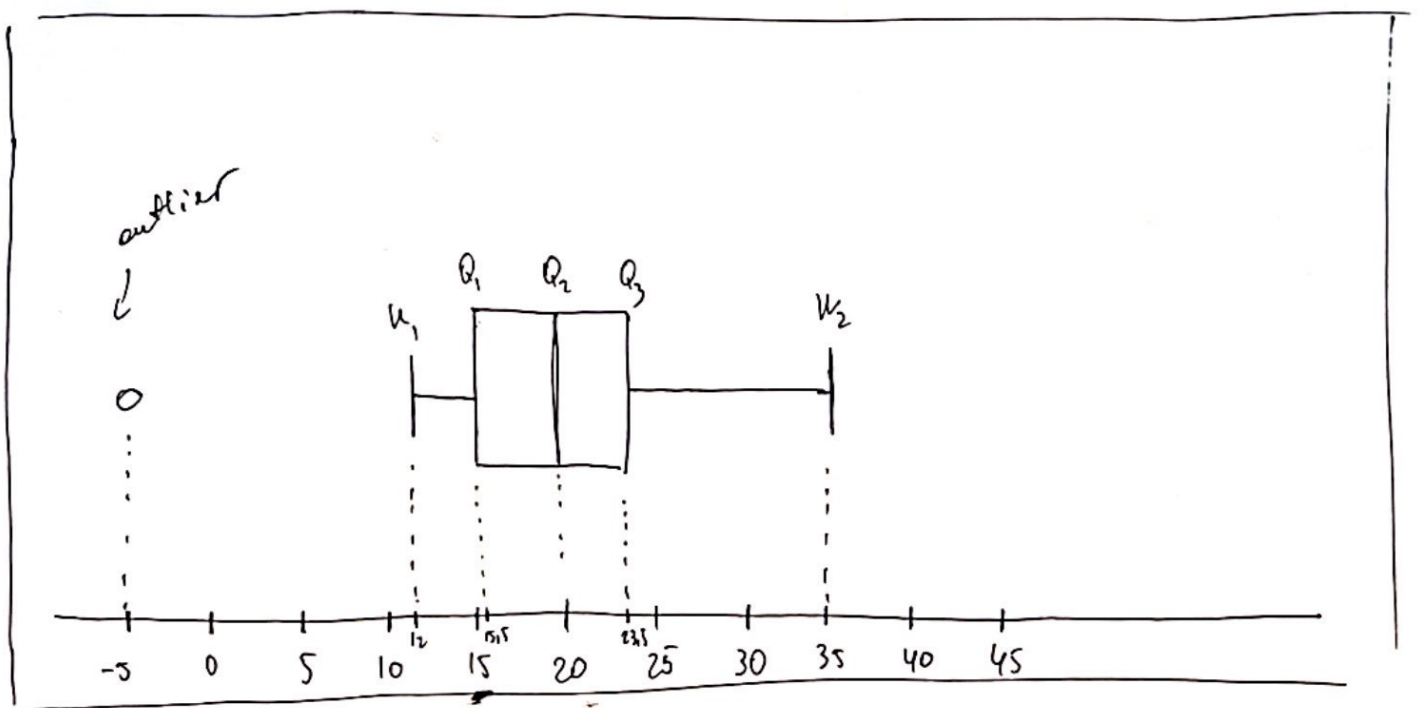
$$IQR = Q_3 - Q_1 = 23.5 - 15.5 = 8$$

$$L = Q_1 - 1.5 IQR = 15.5 - 1.5 \cdot 8 = 3.5$$

$$U = Q_3 + 1.5 IQR = 23.5 + 1.5 \cdot 8 = 35.5 \quad | 29$$

→ we have only 1 outlier: -5

$$W_1 = 12 \quad W_2 = 35$$



3/ Min value in the dataset: -10

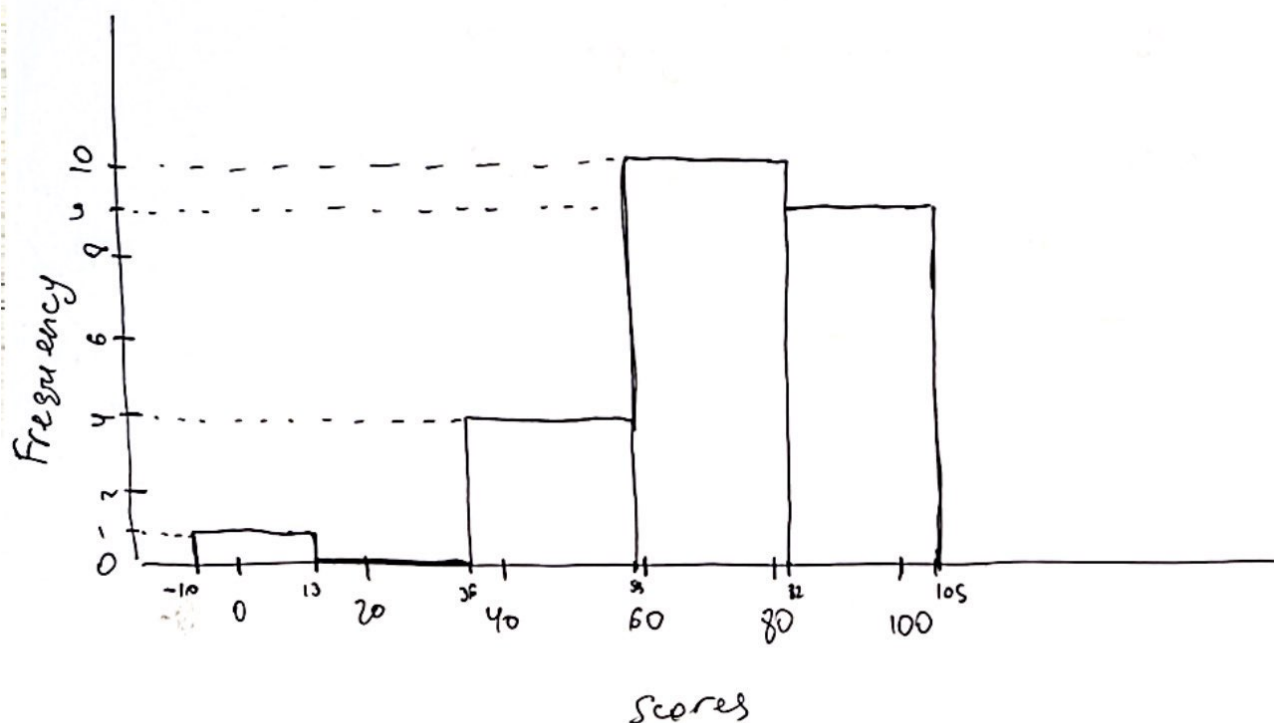
max: 105

$$\text{range} = \text{max} - \text{min} = 105 - (-10) = 115$$

of bins needed: 5

$$\text{bin width} = \frac{\text{range}}{\# \text{ of bins}} = \frac{115}{5} = 23$$

1st bin from -10 → 13 (only -10) - count 1
2nd from 13 → 36 there's no any - count 0
3rd 36 → 59 (contains 45, 50, 55, 55) - count 4
4th 59 → 82 (60, 62, 65, 68, 70, 73, 74, 80, 80, 82) - count 10
5th 82 → 105 (85, 88, 90, 91, 92, 94, 97, 100, 105) - count 9



1) # of values: 16

$$ecdf(x) = \frac{\# \text{ of obs} \leq x}{\text{total \# of obs}} \quad \swarrow \text{rank}$$

Value	Rank	ecdf(x)
-5	1	$1/16 = 0,0625$
-2	2	$2/16 = 0,125$
0	3	$3/16 = 0,1875$
3	4	$4/16 = 0,25$
4	5	$5/16 = 0,3125$
5	7	$7/16 = 0,4375$
6	8	$8/16 = 0,5$
7	10	$10/16 = 0,625$
8	11	$11/16 = 0,6875$
9	13	$13/16 = 0,8125$
10	14	$14/16 = 0,875$
12	15	$15/16 = 0,9375$
15	16	$16/16 = 1$

