

Unequal Averages

Mean = Average

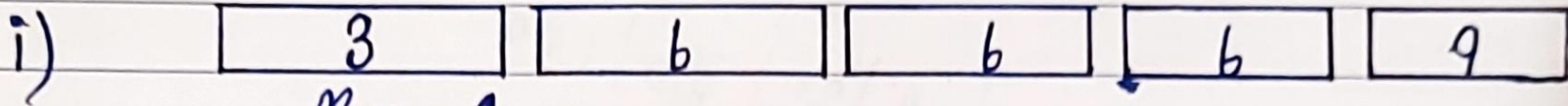
Median = The central number after the numbers are arranged in ascending order

Mode = Number repeating the most

Range = Smallest number subtracted from the biggest number

1) Mean = Median = Mode = Range

Some other number sets are:



$$\text{Mean} = 6$$

$$\text{Median} = 6$$

$$\text{Mode} = 6$$

$$\text{Range} = 6$$



$$\text{Mean} = 8$$

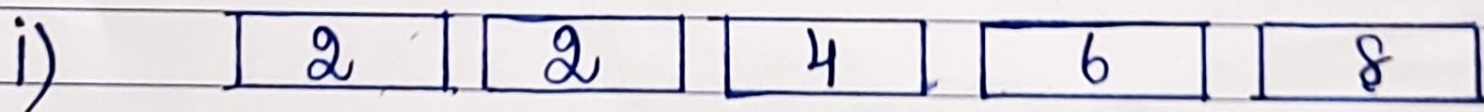
$$\text{Median} = 8$$

$$\text{Mode} = 8$$

$$\text{Range} = 8$$

2) Mode < Median < Mean

Some of the solutions are:



$$\text{Mean} = 4.5$$

$$\text{Median} = 4$$

$$\text{Mode} = 2$$

Range = Not required

ii)

4	4	8	12	16
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$$\text{Mean} = 8.8$$

$$\text{Median} = 8$$

$$\text{Mode} = 4$$

Mode < Mean < Median

3)

12	12	16	18	20
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Median = 16

Mode = 12

Mean = 15.6

48	48	64	72	80
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Median = 64

Mean = 62.4

Mode = 48

4) Mean > Mode > Median

Not possible

This is because of the placement of mean since it cannot be smaller than median and mode, with median as the highest.

5a) Mean < Median < Mode

11	12	18	19	19
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Mean = 15.8

Median = 18

Mode = 19

22	24	36	38	38
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Mean = 31.6

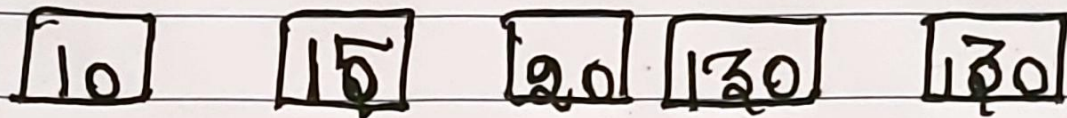
Median = 36

$$\text{Mode} = 38$$

6) Median $<$ Mode $<$ Mean

This is impossible because the mode can only be less than or equal to the median, since if it is more, it will be larger than mean. This does not work.

7) Median $<$ Mean $<$ Mode



$$\text{Mean} = 61$$

$$\text{Median} = 20$$

$$\text{Mode} = 130$$