Chapter 3: central tendency measures in frequency table

1) Mode in the raw data

4, 9, 2, 4, 7, 9, 1, 6, 2, 9

Mode = 9

2) Median

Age	frequency	percentage	Cumulative frequency
2	21		21
15	5		26
27	8		34
43	32		66
59	57		123
61	10		133
N	133		---

N = 133, which is odd number.

When N is odd number, Median locates at the $(\frac{N+1}{2})^{th}$ position

134/2 = 67th median = 59

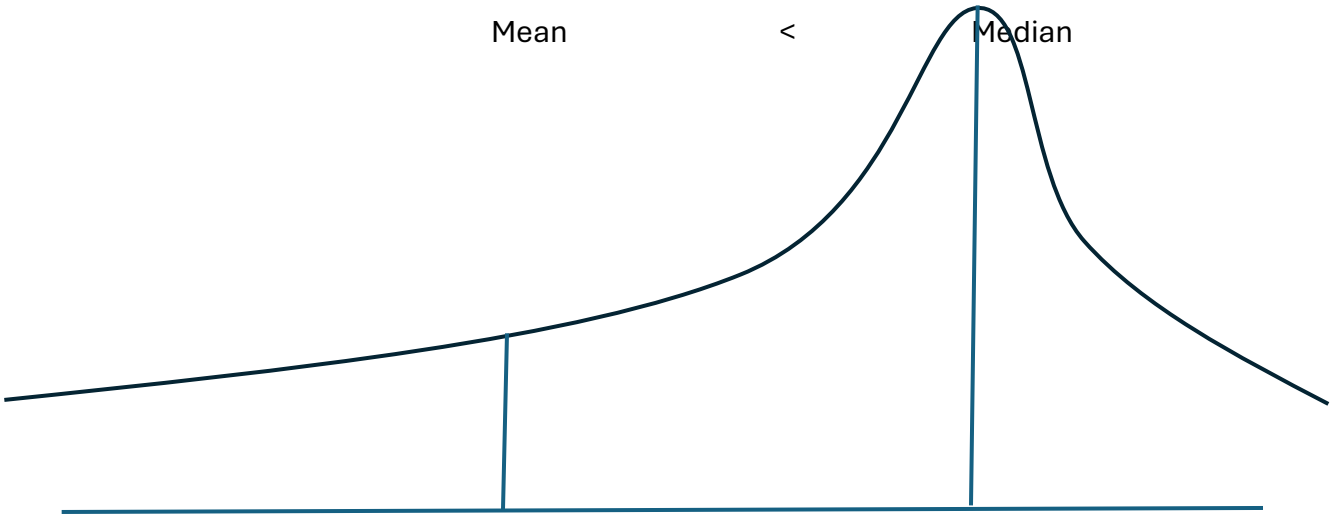
3) Mean

$$\bar{X} = \frac{\sum X_i \times F_i}{N}$$

Age	frequency	percentage	Cumulative frequency
2	21		21
15	5		26
27	8		34
43	32		66
59	57		123
61	10		133
N	133		---

$$\bar{X} = \frac{2 \times 21 + 15 \times 5 + 27 \times 8 + 43 \times 32 + 59 \times 57 + 61 \times 10}{133} = 42.7$$

left skewed



4) When to use which

	nominal	ordinal	Interval ratio
Mode	Yes	Yes	Yes
Median	No	Yes	Yes
Mean	No	Yes	Yes

5) For the following data, please compute its mode, median, and mean, and determine its skewness

Age	frequency	percentage	Cumulative frequency
21	121		121
27	5		126
36	8		134
48	32		166
52	5		171
100	3		174
N	174		---

174 is even number, meaning 174/2 = 87th and 88th locations, calculate the average of the two values in these locations: (21+21)/2 = 21

Meadian = 21

Mean = 29.1

Because Mean > Median, this sample is right skewed