Histograms And Skewness → [Frequency]
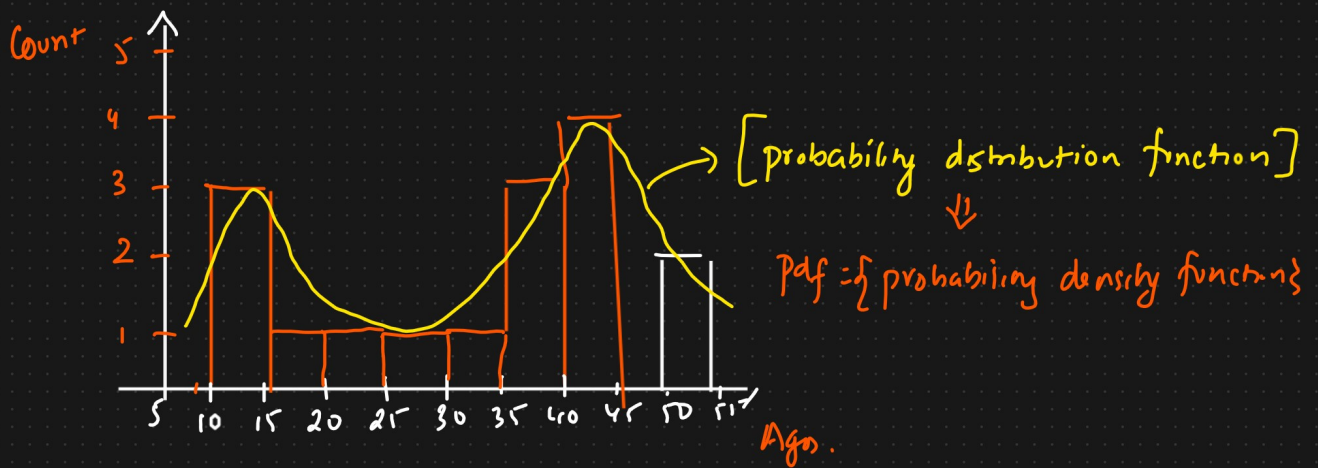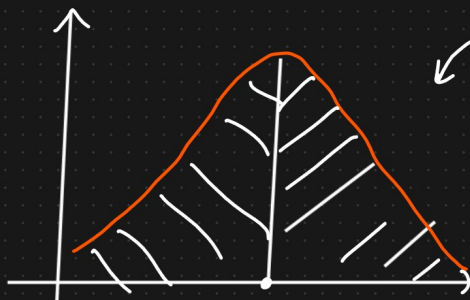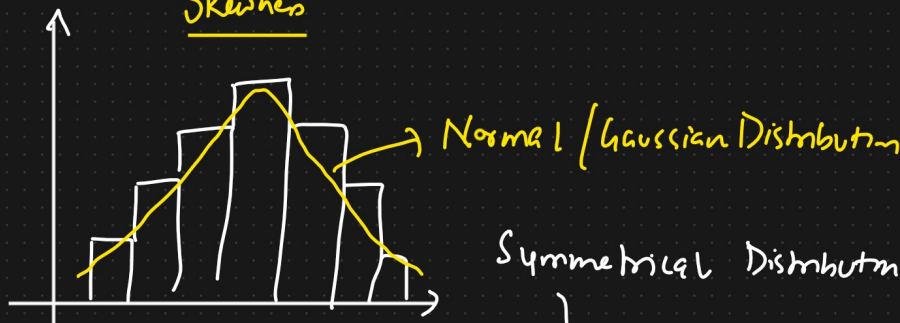
$Ages = \{ 10, 12, 14, 18, 24, 26, 30, 35, 36, 37, 40, 41, 42, 48, 50, 51 \}$

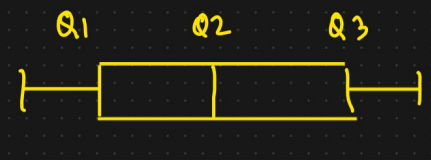$$\frac{50}{10} = \boxed{5} \rightarrow \text{bin size} \qquad \{ \text{No. of bins} = 10 \}$$

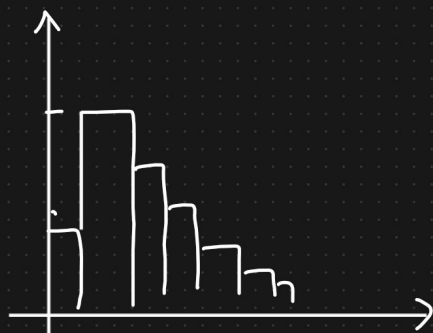$$\frac{50}{20} = 2.5 \rightarrow \text{bin size} \qquad \{ \text{No. of bins} = 20 \}$$

→ [probability distribution function]
↓
Pdf = { probability density function }

Skewness

→ Normal / Gaussian Distribution

Symmetrical Distribution

① No skewness

Box plot

$Q3 - Q2 \approx Q2 - Q1$

The mean, median, and mode all are perfectly at the center

$$\boxed{\text{mean = median = mode}}$$

② Right skewed

$\Rightarrow$ Positive Skewed $\Rightarrow$

Log Normal Distribution
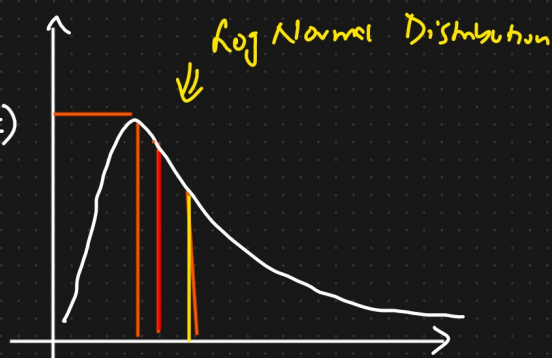
$$\boxed{\text{mean} > \text{median} > \text{mode}}$$

Relationship between Mean, Median, Mode

Box plot

Q_1 Q_2 Q_3
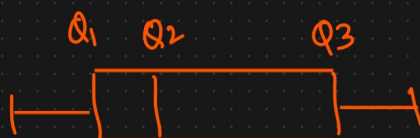
$$Q_3 - Q_2 \geqslant Q_2 - Q_1$$

③ Left Skewed Distribution

$\Rightarrow$ Negative Skewed

Q_1 Q_2 Q_3
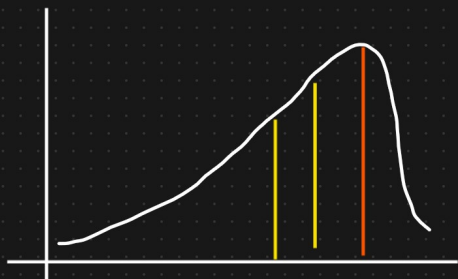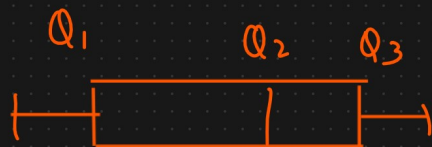
$$Q_2 - Q_1 \geqslant Q_3 - Q_2$$

Relationship : mean $\leqslant$ median $\leqslant$ mode