Chapter 3 - Tools for Analyzing Data

GRAPHICAL DISPLAYS OF INFORMATION

Earthquakes are measured on a scale known as the **Richter Scale**. There data are a sample of earthquake magnitudes in Canada between 1960 and 1965.

5.0	5.0	6.4	5.0	6.0	5.6	6.5	6.5	5.0	5.5
6.4	7.2	5.0	5.7	5.6	5.0	5.0	5.0	5.0	5.1
5.0	7.0	5.5	5.2	4.6	6.3	7.2	6.0	5.4	5.8
6.0	5.7	6.5	5.0	5.7	5.0	5.6	6.0	5.6	6.2

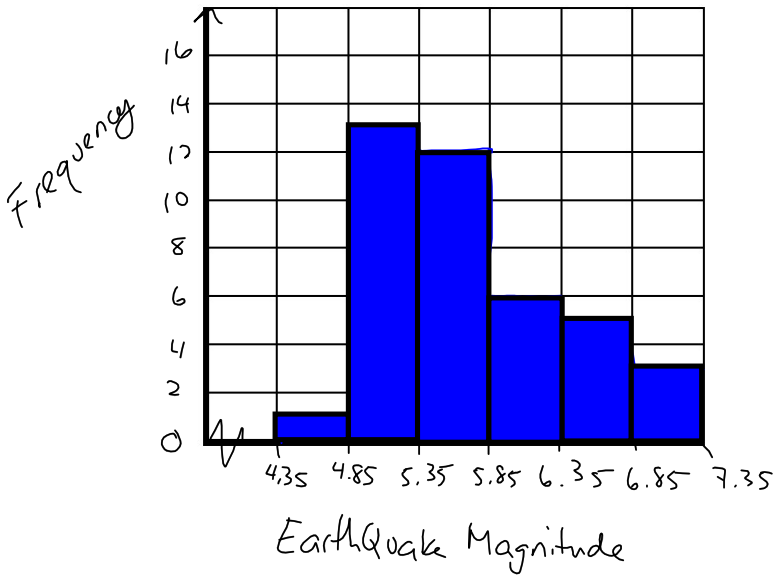
Source: United States Geological Survey, National Earthquake Information Center

Class	Tally	Frequency
[4.35-4.85)	𝍸	1
[4.85-5.35)	𝍸 𝍸 𝍸 𝍸 𝍸 𝍸 𝍸 𝍸 𝍸 𝍸 𝍸 𝍸 𝍸	13
[5.35-5.85)	𝍸 𝍸 𝍸 𝍸 𝍸 𝍸 𝍸 𝍸 𝍸 𝍸 𝍸 𝍸	12
[5.85-6.35)	𝍸 𝍸 𝍸 𝍸 𝍸 𝍸	6
[6.35-6.85)	𝍸 𝍸 𝍸 𝍸 𝍸	5
[6.85-7.35)	𝍸 𝍸 𝍸	3

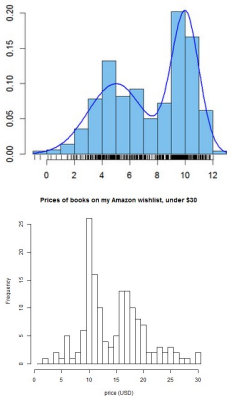
$$\text{Bin Width} = \frac{\text{Range}}{\#\text{ of intervals}}$$

$$= \frac{3}{6}$$

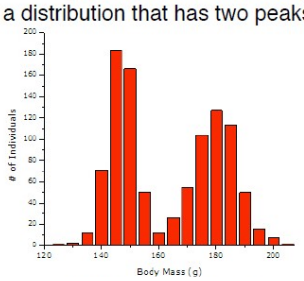
$$= 0.5$$



Types of Distributions:

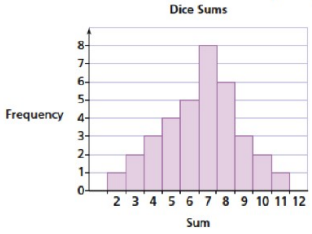


Biomodal Distribution (U-shaped Distribution):
a distribution that has two peaks

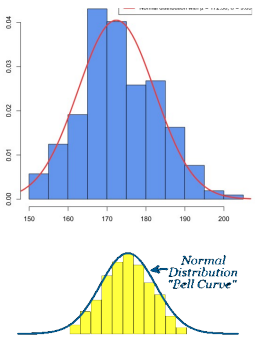


Normal

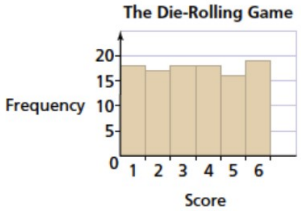
Mound-Shaped Distribution:
symmetrical about a line passing through the interval with the greatest frequency



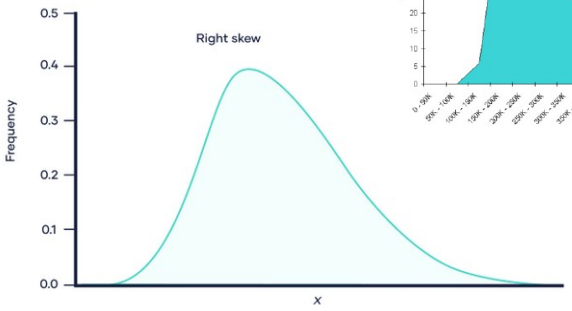
Symmetric Distribution: shows mirror symmetry about the centre (e.g., uniform, U-shaped, and mound-shaped distributions)

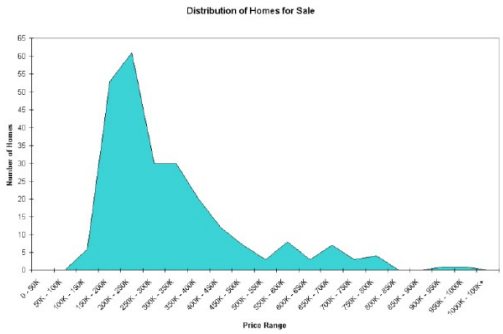


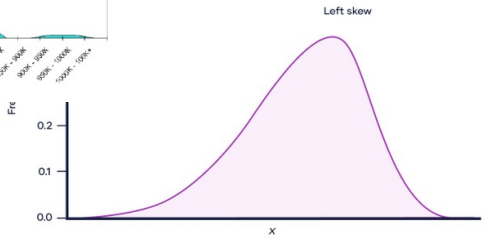
Uniform Distribution:
each outcome has a similar frequency



Skewed Distribution: an assymetrical distribution where the direction denotes skew type (right-skewed, left-skewed)







Practice: #1-4, 7, 8