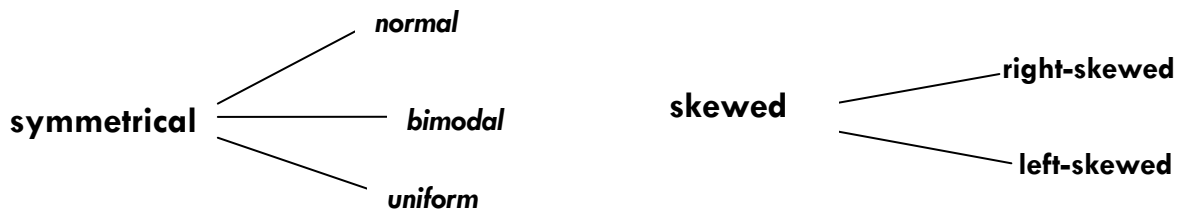


COMMON DISTRIBUTION PROPERTIES

Histograms can take on any of several common shapes. Among these distributions are:



Using the information (your note), match up the example and graph to the appropriate definitions.

NORMAL DISTRIBUTIONS

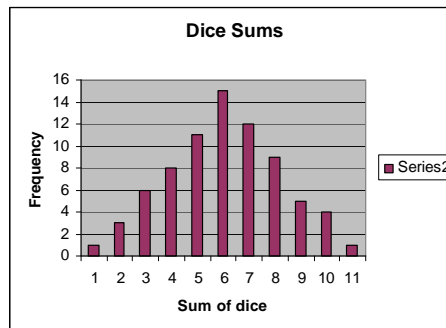
These are commonly referred to as bell-curves or mound-shaped distributions.

The middle interval(s) will have the greatest frequency (i.e. the tallest bar).

All other intervals will have decreasing frequencies as you move away from the centre of the graph (i.e. the bars get smaller as you move out to the edges).

Ex 1: A pair of dice were rolled 75 times. After each roll, their sum was recorded and graphed.

Sum on dice	Frequency
2	1
3	3
4	6
5	8
6	11
7	15
8	12
9	9
10	5
11	4
12	1



Note: Even though it isn't perfectly symmetrical, it still fits the definition of a normal distribution.

BIMODAL DISTRIBUTIONS

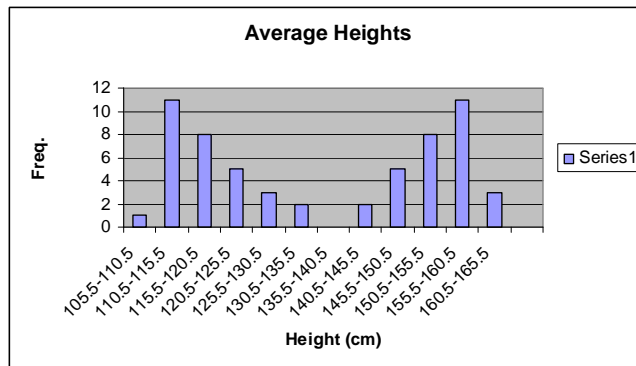
These look like inverted normal distributions.

The intervals with the highest frequencies (i.e. tallest bars) are at both ends of the graph and the interval with the lowest frequency is in the centre.

Frequencies increase as you move away from the centre of the graph.

Ex 2: A class of grade 6 and grade 1 students each measured their heights. They recorded and graphed them.

Height (cm)	Frequency
105.5-110.5	1
110.5-115.5	11
115.5-120.5	8
120.5-125.5	5
125.5-130.5	3
130.5-135.5	2
135.5-140.5	0
140.5-145.5	2
145.5-150.5	5
150.5-155.5	8
155.5-160.5	11
160.5-165.5	3

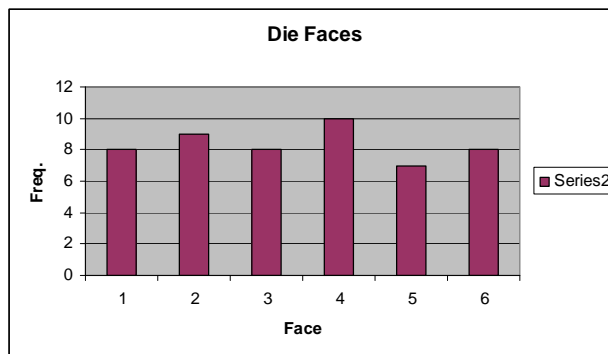


UNIFORM DISTRIBUTIONS

The frequencies of each interval are approximately equal.

Ex 3: A die is rolled 50 times. The face is recorded and graphed.

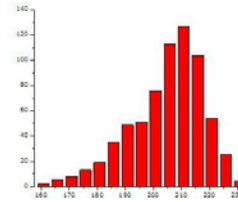
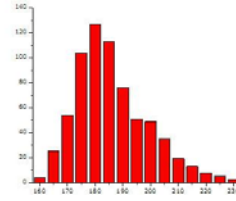
Die Face	Frequency
1	8
2	9
3	8
4	10
5	7
6	8



SKEWED DISTRIBUTIONS

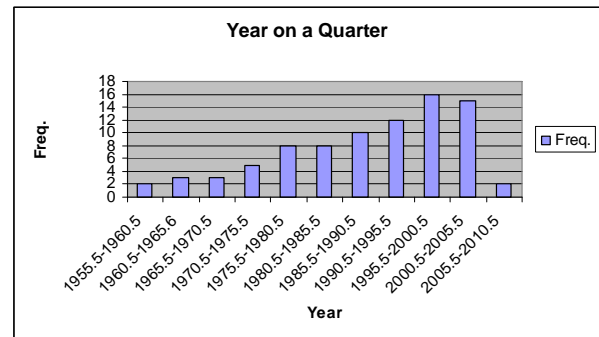
There are 2 kinds of skewed graphs:

1. In **right-skewed** graphs, the bars with the highest frequencies are on the left side and the frequencies decrease as you move right.
2. In **left-skewed** graphs, the bars with the highest frequencies are on the right side and the frequencies decrease as you move left.



Ex 4: Sally picked up a handful of quarters. She recorded the year of each and made a graph.

Year	Frequency
1955.5-1960.5	2
1960.5-1965.6	3
1965.5-1970.5	3
1970.5-1975.5	5
1975.5-1980.5	8
1980.5-1985.5	8
1985.5-1990.5	10
1990.5-1995.5	12
1995.5-2000.5	16
2000.5-2005.5	15
2005.5-2010.5	2



Note: Even though there is a low-frequency bar on the right side, the trend is still **left-skewed**.