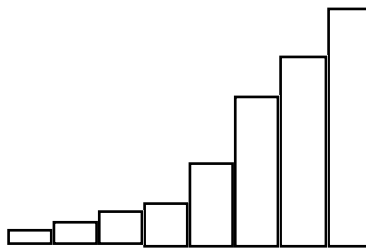


Section 6 – 1B: Normal or Bell Shaped Distributions

Discrete Distributions are not all Bell Shaped

Some discrete distributions have the **larger $P(x)$ values on the right** side of the curve and **the small $P(x)$ values on the left** side of the curve.

These distributions are called **skewed left**.

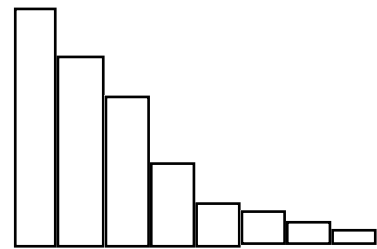


the “tail” is to the left

A discrete distribution that is **skewed left**

Some discrete distributions have the **larger $P(x)$ values on the left** side of the curve and **the small $P(x)$ values on the right** side of the curve.

These distributions are called **skewed right**.

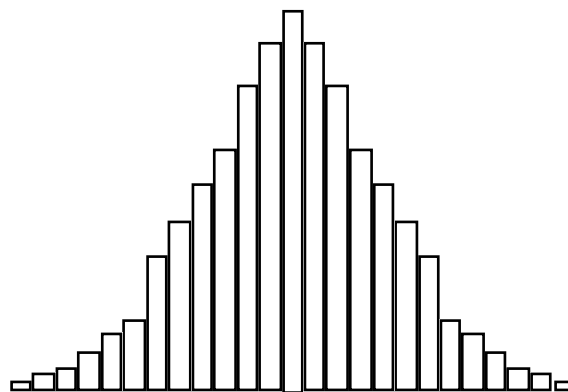


the “tail” is to the right

A discrete distribution that is **skewed right**

Some Discrete Distributions are Bell Shaped

Some Discrete Probability Distributions are represented by histograms where the **larger values of $P(x)$ are in the middle of the graph** and **the largest value of $P(x)$ in the center**. They have values for $P(x)$ that grow smaller and smaller the farther you are from the center. The left and right sides of the histogram are reflections of each other. These distributions are symmetric about the center value of $P(x)$. These discrete distributions are considered **Normal** or Bell Shaped.



A discrete distribution that is **Normal** or Bell Shaped

Continuous Distributions

Normal Distributions

Normal Continuous Probability Distributions are represented by smooth curves whose distributions have all the **larger values of $P(x)$ in the middle of the graph** and the **largest value of $P(x)$ in the center**. The values for $P(x)$ grow smaller the farther you are from the center. The shape of the left and right sides of the histogram are reflections of each other. These distributions are **symmetric about the maximum center value of $P(x)$** . These distributions are considered **Normally Distributed**.



A Continuous Distribution that is **Normally Distributed**

Continuous Distributions are not all Normal

Some continuous distributions have the **larger $P(x)$ values on the right** side of the curve and **the small $P(x)$ values on the left** side of the curve.

These distributions are called **skewed left**.



A Continuous Distribution that is **skewed left**

Some continuous distributions have the **larger $P(x)$ values on the left** side of the curve and **the small $P(x)$ values on the right** side of the curve.

These distributions are called **skewed right**.



A Continuous Distribution that is **skewed right**

Important Note:

In most cases in the remaining material you **cannot** use the procedures introduced in that section unless the data is normally distributed. Each Chapter will have a formula that will help you determine if the data is normally distributed or not.