What are some examples of right skewed histograms and how can they be interpreted?

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A right skewed histogram is a graphical representation of a data set in which the majority of the data points are clustered towards the left side of the histogram, with a long tail extending towards the right side. This type of histogram is also known as a positively skewed histogram.

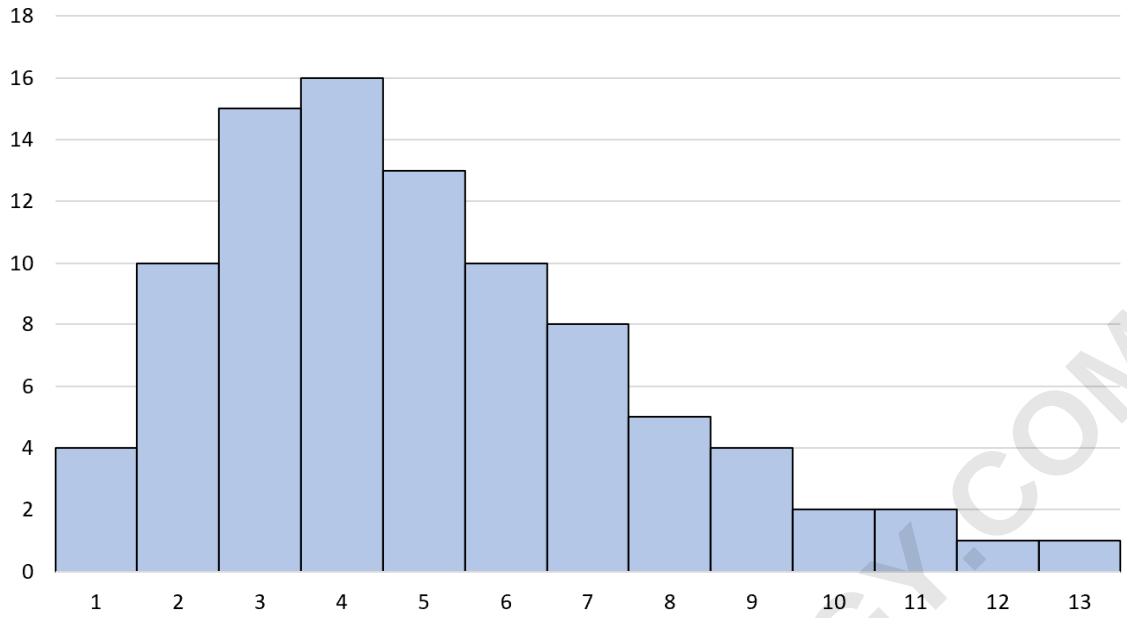
Some examples of right skewed histograms include income distributions, where a large number of people have relatively low incomes and a small number of people have very high incomes, or test scores, where most students receive average or below average scores and a few students receive exceptionally high scores.

Interpreting a right skewed histogram involves understanding that the data is not evenly distributed and that there is a larger concentration of data towards one end of the spectrum. This indicates that there is a significant number of outliers or extreme values in the data set. In other words, the data is heavily influenced by a few high values, which can skew the overall picture of the data. It is important to consider these outliers when analyzing the data, as they can have a significant impact on the overall results.

Right Skewed Histogram: Examples and Interpretation

A histogram is a type of chart that allows us to visualize the distribution of values in a dataset.

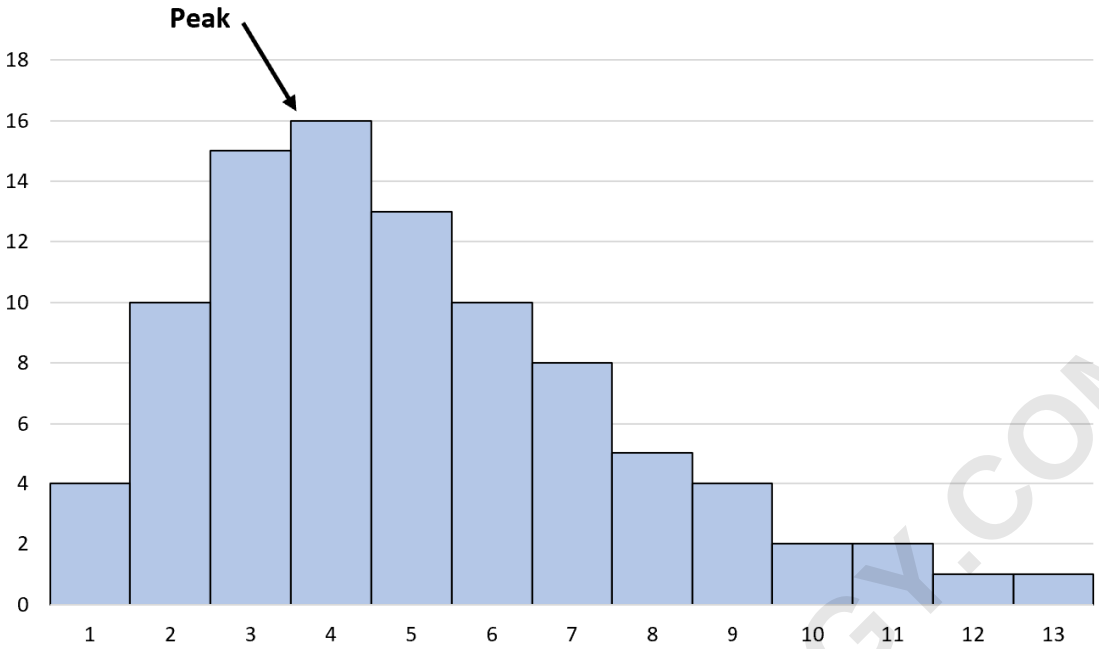
We say that a histogram is right skewed if it has a "tail" on the right side of the distribution:



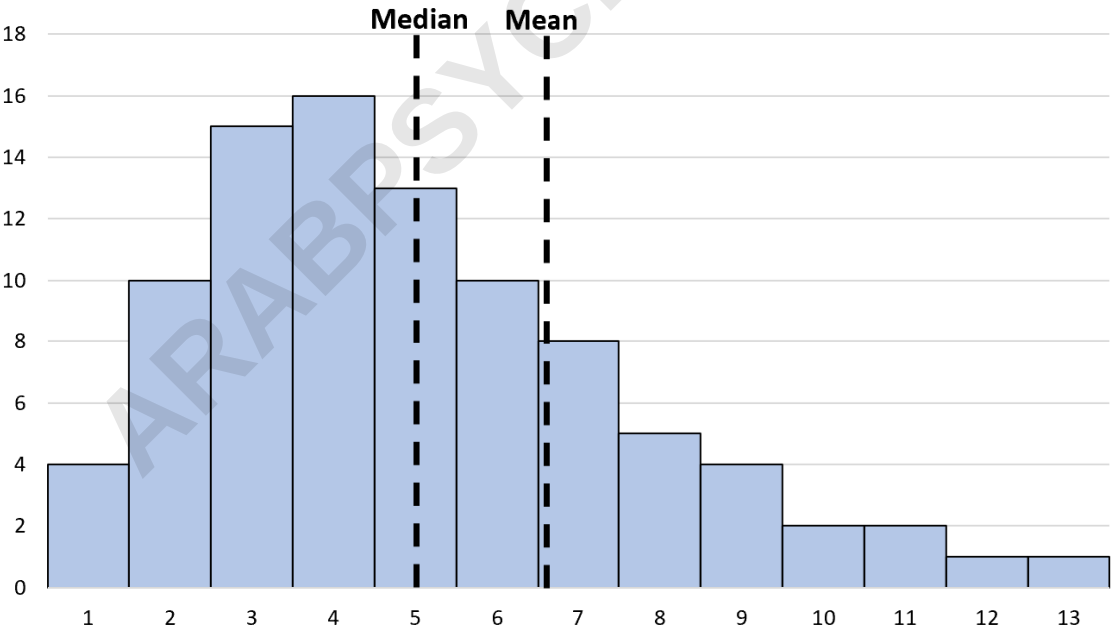
Note: Sometimes a right skewed histogram is also referred to as a *positively skewed histogram*.

A right skewed histogram has the following two properties:

1. The peak of the distribution is on the left side.



2. The mean is greater than the median.



What Causes a Histogram to Be Right Skewed?

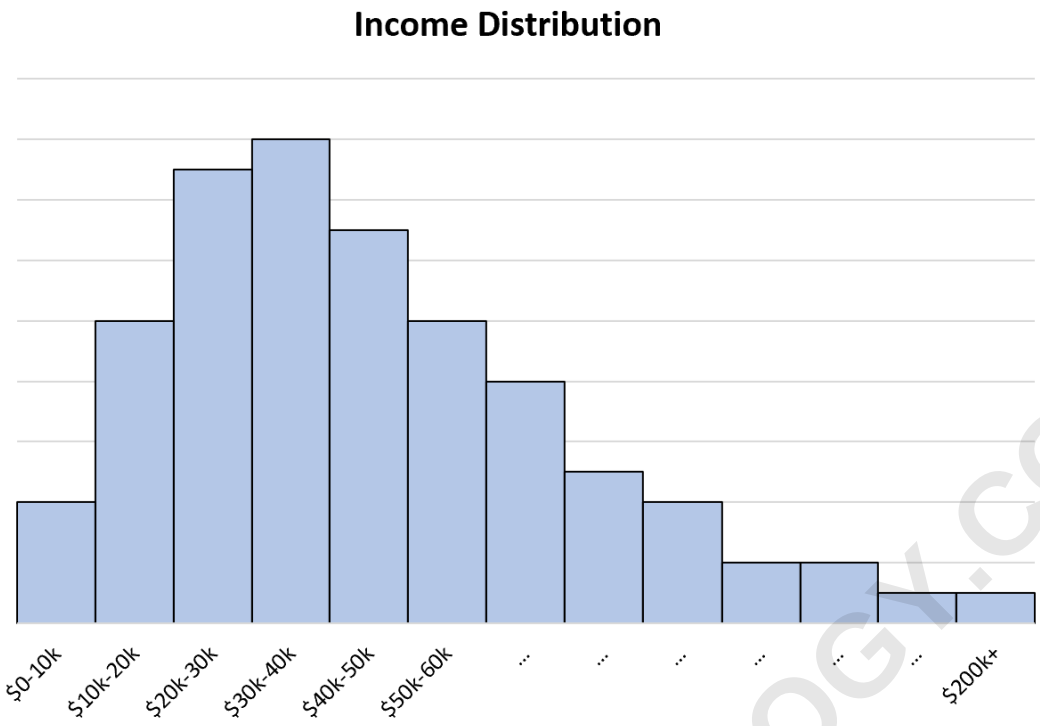
A histogram is typically right skewed when there is a limit on the minimum possible value but no limit on the maximum possible value.

The most obvious real-life example of a right skewed histogram would be the distribution of income in a country.

The minimum income that a person could earn is zero dollars while there is no maximum income that a person could earn.

In general, most individuals might earn around $40k per year but there will be a few outliers that earn several millions of dollars per year.

When we create a histogram to visualize the distribution of income, it will naturally be right skewed:



Why is the Mean Greater than the Median in a Right Skewed Histogram?

As a simple example, suppose we have the following dataset that contains the income of 10 individuals:

Dataset 1: $30k, $35k, $35k, $40k, $50k, $55k, $55k, $70k, $90k, $110k

Here are the mean and median values of this dataset:

Mean: $57kMedian: $52.5k

Now suppose we have another dataset that contains the exact same incomes except the last value is now $2.5

million:

Dataset 2: $30k, $35k, $35k, $40k, $50k, $55k, $55k, $70k, $90k, $2.5 million

Here are the mean and median values of this dataset:

Mean: $296kMedian: $52.5k

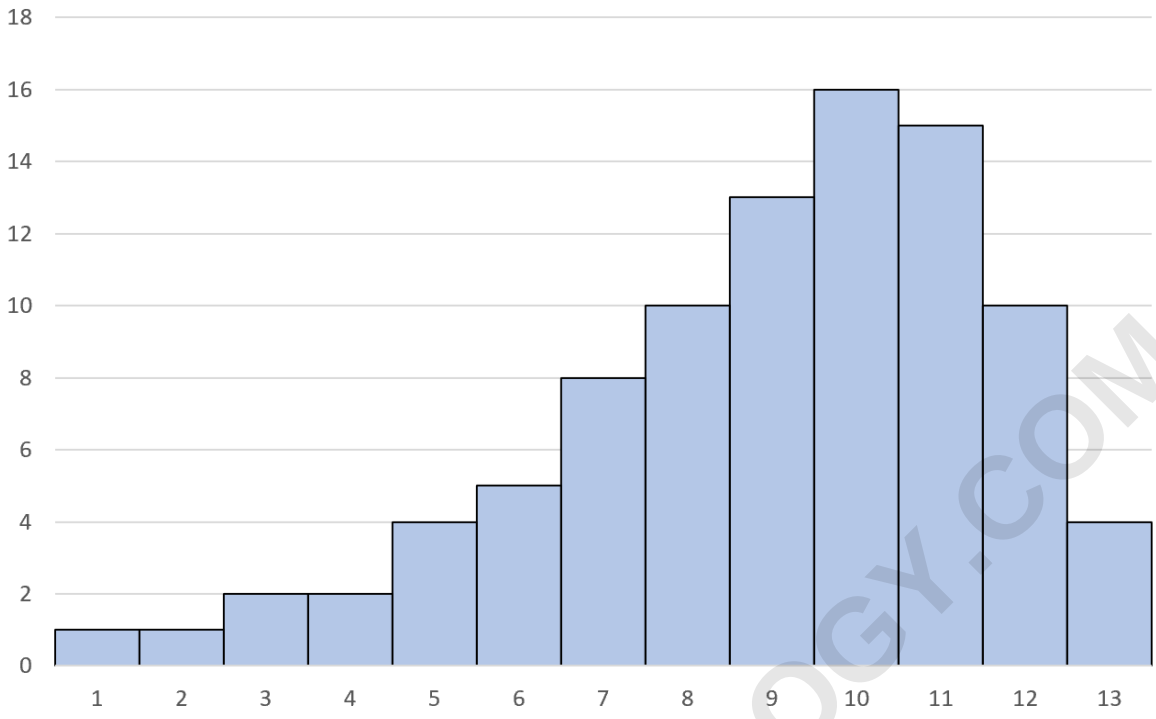
This last outlier value causes the mean income to increase significantly.

And if we plot this distribution, it would be a right skewed histogram with the $2.5 million value located on the right "tail" of the histogram.

The Difference Between Right Skewed & Left Skewed Histograms

The opposite of a right skewed histogram is a left skewed histogram.

This is a type of histogram that has a "tail" on the left side of the distribution:



This type of histogram has the following properties:

1. The peak of the distribution is on the right side.

2. The mean is less than the median.

Notice that these are the exact opposite properties of a right skewed histogram.

Read more about left skewed histograms in .

The following tutorials provide additional information about histograms: