**What is Fibonacci retracement?**

**Where do the ratios used, come from?**

[Fibonacci retracement](http://www.investopedia.com/terms/f/fibonacciretracement.asp) is a very popular tool among technical traders and is based on the key [numbers](http://www.investopedia.com/terms/f/fibonaccilines.asp) identified by mathematician Leonardo Fibonacci in the thirteenth century. However, Fibonacci's sequence of numbers is not as important as the mathematical relationships, expressed as ratios, between the numbers in the series. In technical analysis, Fibonacci retracement is created by taking two extreme points (usually a major [peak](http://www.investopedia.com/terms/p/peak.asp) and [trough](http://www.investopedia.com/terms/t/trough.asp)) on a forex or stock chart and dividing the vertical distance by the key Fibonacci ratios of 23.6%, 38.2%, 50%, 61.8% and 100%. Once these levels are identified, horizontal lines are drawn and used to identify possible [support](http://www.investopedia.com/terms/s/support.asp) and [resistance](http://www.investopedia.com/terms/r/resistance.asp) levels. Before we can understand why these ratios were chosen, we need to have a better understanding of the Fibonacci number series. (For a more in-depth information on the calculation of Fibonacci numbers, see [*Fibonacci And The Golden Ratio*](http://www.investopedia.com/articles/technical/04/033104.asp).)

The Fibonacci sequence of numbers is as follows: 0, 1, 1, 2, 3, 5, 8, 13, 21, 34, 55, 89, 144, etc. Each term in this sequence is simply the sum of the two preceding terms and sequence continues infinitely. One of the remarkable characteristics of this numerical sequence is that each number is approximately 1.618 times greater than the preceding number. This common relationship between every number in the series is the foundation of the common ratios used in [retracement](http://www.investopedia.com/terms/r/retracement.asp) studies.

The key Fibonacci ratio of 61.8% - also referred to as "the golden ratio" or "the golden mean" - is found by dividing one number in the series by the number that follows it. For example: 8/13 = 0.6153, and 55/89 = 0.6179.

The 38.2% ratio is found by dividing one number in the series by the number that is found two places to the right. For example: 55/144 = 0.3819.

The 23.6% ratio is found by dividing one number in the series by the number that is three places to the right. For example: 8/34 = 0.2352.

For reasons that are unclear, these ratios seem to play an important role in the forex and stock markets, just as they do in nature, and can be used to determine critical points that cause an asset's price to reverse. The direction of the prior trend is likely to continue once the price of the asset has retraced to one of the ratios listed above.

In addition to the ratios described above, many traders also like using the 50% and 78.6% levels. The 50% retracement level is not really a Fibonacci ratio, but it is used because of the overwhelming tendency for an asset to continue in a certain direction once it completes a 50% retracement.