How many ways are there to reach your cell, if you can only move to the right? There is only one path to cell 1, two to cell 2, three to cell 3, but five to cell 4. How many paths are there to cell 11? (answer page 7)

There is only one path to cell 1, two to cell 2, three to cell 3, but five to cell 4.

- Lines

Using bricks 2 units by 1 unit, how many ways are there to build a brick wall 2 units high and 4 units long? How many ways are there to build the wall if it is 11 units long?

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BRICK walls

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**The elusive nature of the Golden Ratio!**

The Golden Ratio is intimately connected with the Fibonacci sequence. The ratio of two consecutive Fibonacci numbers approaches the Golden Ratio as they increase.

The Fibonacci sequence is defined by the recurrence relation $F_n = F_{n-1} + F_{n-2}$, with initial conditions $F_1 = 1$ and $F_2 = 1$. The ratio of successive Fibonacci numbers $F_{n+1}/F_n$ converges to the Golden Ratio $\phi = (1 + \sqrt{5})/2$ as $n$ approaches infinity.

The Golden Ratio has many interesting properties and is found in various fields, including music, art, and architecture. It is also related to the concept of the Fibonacci spiral, which is often used to describe the arrangement of leaves, petals, and other natural phenomena.

The Golden Ratio is an irrational number, meaning it cannot be expressed as a simple fraction. It has an infinite number of digits after the decimal point, and it is the most irrational number, as its continued fraction representation is the longest possible for an irrational number.

The Golden Ratio and Fibonacci numbers are closely related, as the ratio of consecutive Fibonacci numbers approaches the Golden Ratio. This connection has been observed in the structure of musical compositions, where the ratio of parts can be approximated by Fibonacci numbers, leading to aesthetically pleasing structures.

In summary, the Golden Ratio is a fundamental mathematical concept that appears in various aspects of nature and human creations, highlighting the beautiful and profound connections between mathematics and the world around us.