

The Golden Ladder

The Golden Ratio is one of the better known irrational numbers, $\varphi = (1 + \sqrt{5})/2$ or ca 1.6180339887... as an infinite decimal number. Some important geometric shapes using the Golden Ratio include the golden rectangle and the golden triangle and many interesting properties have been described for both. In this work, some new Euclidean structures called the golden ladder was introduced. The golden ladder was first created in visual software by applying the golden ratio to the diameters of tangent circles. For this work three recursive properties of the circumference and area have been proven. The golden ladder has been expanded to the third dimension, and it is possible to expand the definition to the n^{th} dimension. The volume will be the property of interest in the third dimension. Additional interesting properties have been found for the golden ladder and are currently under investigation.

Keywords: the Golden Ratio, the golden ladder, Euclidean structures.