



Sandro Botticelli, *Primavera*, c. 1482

THE GOLDEN SECTION IS A SPECIAL RATIO that defines the relationship between two elements such that the relationship of the smaller element to the larger element equals the relationship of the larger element to the whole. Mathematically, the golden section can be expressed as two ratios: $a/b = b/(a+b)$. Or, in more banal terms, it's the ratio of 1:1.618. • Confused yet? The numbers may not be very intuitive, but creating an object that uses these proportions isn't hard. Figure 1 shows how to create a golden rectangle based on the golden section ratios. You begin with a square (the white box), draw diagonals between opposite corners to find the center, and then draw a line neatly through its middle. Then take the distance from the middle of one side (point *a*) to an opposite corner (point *b*), and add that length—shown here as a red line—outward from point *a* to point *c*. Once you draw a rectangle that encompasses these lines, you have two golden rectangles—the entire object (outlined in black) and the light green rectangle that's been "added" to the original square. • When a perfect square is added to a golden rectangle, the result is always another golden rectangle. In figure 2, for instance, the entire object is a golden rectangle, as is the space defined by the dotted line, as is the light green area, and so on. • In addition to its use in architecture and design, the golden section can be used to describe the growth patterns of shells (as in the spiral shown in figure 2) and other natural organisms. It also parallels the progression of whole numbers described by the Fibonacci series. (In the Fibonacci series, each number is the sum of the two preceding numbers.) I've never intentionally used the golden section as the basis for any design decisions—but I love the idea of basing proportions on a system that's in harmony with the cosmos.

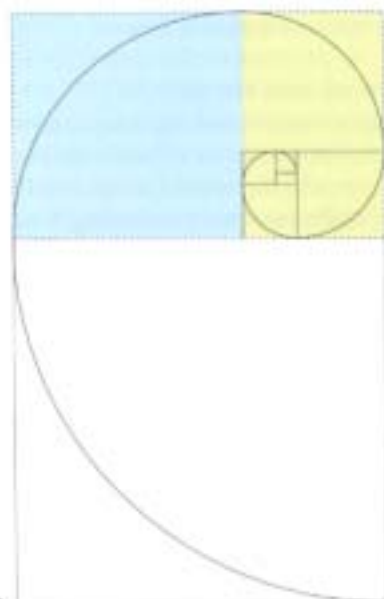
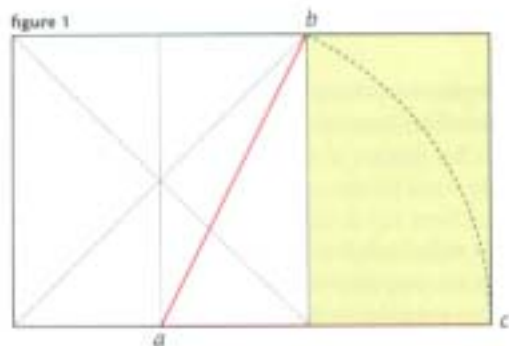


figure 2