Hell Money Resizing © 1997 James M. Sakoda

American Dollar Bill

To fold the Six Point Star and other figures from Modern Origami using dollar bills opposite corners are first folded together to get the center diagonal crease, which determines where the folding of the corners begin (Fig. 1). The American dollar bill measures about 2 5/8 x 6 1/8 inches, a ratio of width to length of about 2.33. This compares with ideal ratio for folding the six point star of 2.414. This close fit makes it possible to use the dollar bill for folding the six point star so that the corners end close to the opposing side, without leaving an awkward gap.

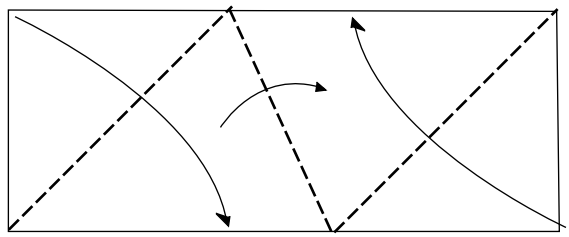

Fig. 1

Hell Money

I have been using so-called Hell Money purchased in a Korean or Chinese grocery store, which is colored green and looks like paper money and is inexpensive to use . It is light weight and in some respect easier to fold than dollar bills. However, its length is a little short and causes a gap at the edge on the opposite side when corners are folded in, as shown in Fig. 2. This results in unevenness and weakness on the side with the gap, which makes accurate folding difficult and mars the appearance when the underside is shown. I have therefore decided to trim one long edge of the bill to achieve the ideal ratio.

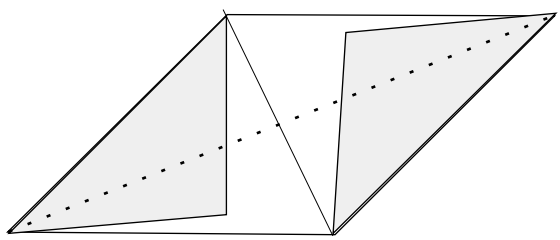

Fig. 2

The Ideal Ratio

In Fig. 3 the proportion of width to length is correct and the corners meet the edge, covering the entire underside, except for a little rectangle in the center. To find the correct ratio of length to width, one needs to solve for b/a the width length divided by the width. The diagonal of the end square, using the Pythagorean theorem, is given by

sqrt(2 a^2) or sqrt (2) a.

This equals to 1.4142 a. This diagonal is also equal to b-a as can be seen by the symmetry of the equal lateral triangle forming half of the diamond shape, as can be seen in Fig. 4. Hence,

b - a = 1.4142 a

b = a + 1.4142 a = 2.4142 a.

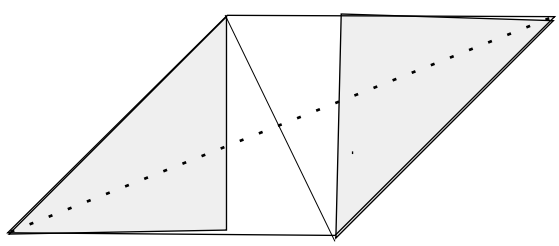

Fig. 3

Trimming the Hell Money

For my Chinese hell money the dimensions were 2.5 x 5.28 inches, with a ratio of b to a of 2.19, which left a gap when the corners were folded. I have therefore trimmed the long edge by calculating the ideal width for the present length which came out to:

a = 5.28 / 2.4142 = 2.19

The amount that I trimmed off, using a paper cutter was

2.5 -2.19 = .31.

This was almost a third of an inch and made the paper a little smaller, but much easier to fold accurately.

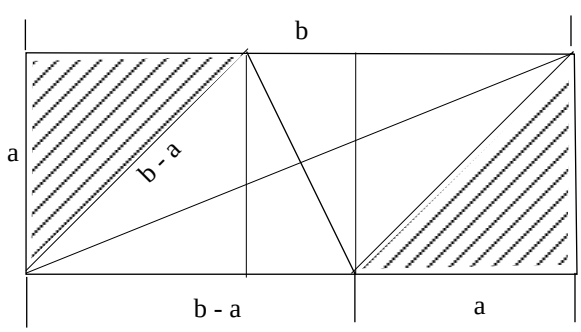

Fig. 4