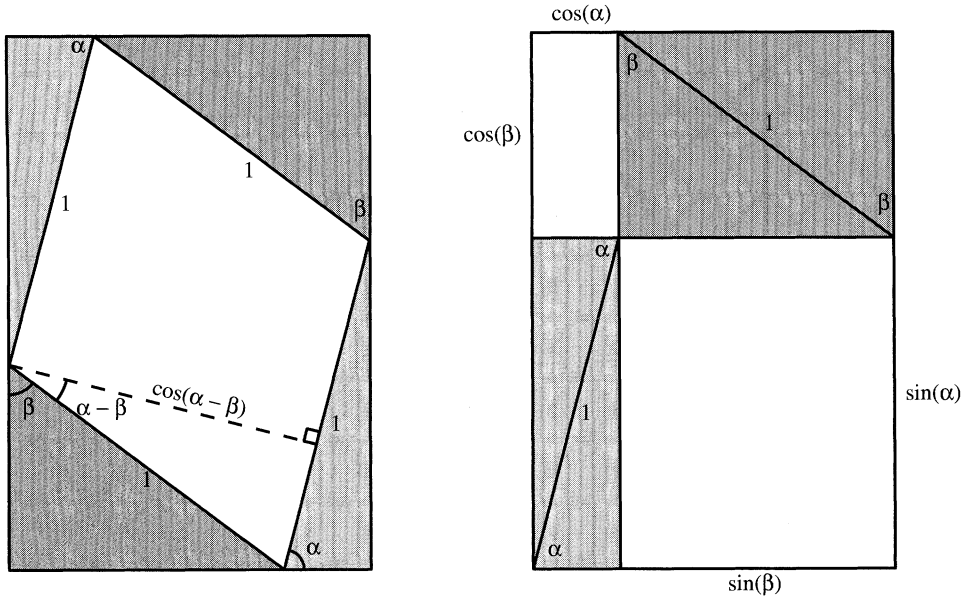
Proof Without Words: The Cosine of a Difference

The area of the white rhombus is $\cos(\alpha - \beta)$.



$$\cos(\alpha - \beta) = \cos(\alpha)\cos(\beta) + \sin(\alpha)\sin(\beta)$$

With inspiration from Priebe and Ramos.

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REFERENCE

1. V. Priebe and E. A. Ramos, Proof without words: the sine of a sum, this MAGAZINE **73**:5 (2000), 392.

Answer to decryption problem from page 395:

The text was placed into a 5×13 linear grid with openings in the 3, 6, 10, and 11 slots of the 1st sector, in the 2 slot of the 2nd sector, in the 4, 5, and 7 slots of the 3rd sector, in the 1, 12, and 13 slots of the 4th sector, and in the 8 and 9 slots of the 5th sector. The text was placed into the linear grid from left to right, and the characters were read from the openings going left to right. The text RFVTGBYH was used to fill the remaining cells of the grid.

HOW MUCH WOOD COULD A WOODCHUCK CHUCK IF A
WOODCHUCK COULD CHUCK WOOD RFVTGBYH