
Problem of the Week

Number Six

Just an old fashioned sine and cosine problem for you this week. Your answer should be expressed in terms of a , of course.

Suppose that a is a nonzero real number for which the following two equations hold:

$$\sin x + \sin y = a$$

$$\cos x + \cos y = 2a.$$

Find $\cos(x - y)$.

FOLLOW THESE INSTRUCTIONS TO THE LETTER:

Please place your name and e-mail address at the top of this page. If you are receiving class credit for participating, please indicate the course number and your professor. Your answer to the problem, coupled with a clear explanation of how you arrived at it, should appear on the back of this page. Be sure to write neatly! If I can't easily read your paper, then I will discard it.

Due Wednesday, April 8 by 5:00 to Jason Rosenhouse in Roop 121. One weekly winner will receive a five dollar gift card to Greenberry's, and will be chosen randomly from among the correct answers.