

# CLASSROOM CAPSULES

Edited by  
Frank Flanigan

Assistant Editors: Russell Merris, Ken Rebman

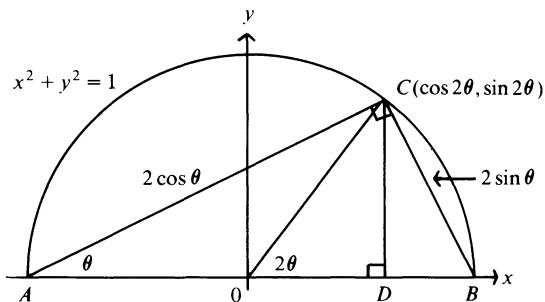
A Classroom Capsule is a short article that contains a new insight on a topic taught in the earlier years of undergraduate mathematics.

Please submit manuscripts prepared according to the guidelines on the inside front cover to:

Frank Flanigan  
Department of Mathematics and Computer Science  
San Jose State University  
San Jose, CA 95192

## The Double-Angle Formulas

Roger B. Nelsen, Lewis and Clark College, Portland, OR



$$\triangle ACD \sim \triangle ABC$$

$$\begin{aligned} \overline{CD}/\overline{AC} &= \overline{BC}/\overline{AB} \\ \sin 2\theta / 2 \cos \theta &= 2 \sin \theta / 2 \\ \sin 2\theta &= 2 \sin \theta \cos \theta \end{aligned}$$

$$\begin{aligned} \overline{AD}/\overline{AC} &= \overline{AC}/\overline{AB} \\ (1 + \cos 2\theta) / 2 \cos \theta &= 2 \cos \theta / 2 \\ \cos 2\theta &= 2 \cos^2 \theta - 1 \end{aligned}$$

