

## COMMENTS ON WAKEMAN'S THEOREM

The article "Student Discovers an Original Theorem?" by Duane Bollenbacher and Noah Wakeman appeared in the August 1991 issue of *Ohio Journal of School Mathematics*. We've just received a note from Duane:

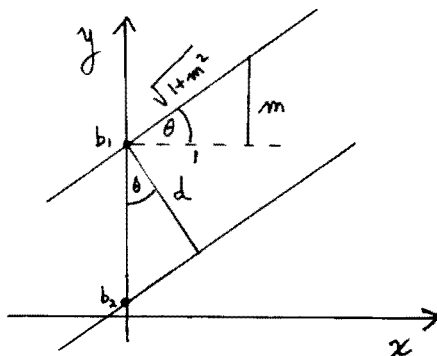
Thanks to all who wrote and commented on the original theorem and proof by Noah Wakeman. Mary Rhein, West Chester Lakota High School, found Noah's theorem in *Pre-Calculus* by David Cohen, West Publishing Company, 1984. And Don Gerke of Eastwood High School pointed out that this theorem and its proof is found in *Pre-Calculus Mathematics* by Merrill, 1988. In fact, in Merrill this theorem is proven first and then used to prove the more common theorem:

$$d = \frac{|Ax_1 + By_1 + C|}{\sqrt{A^2 + B^2}}$$

Duane Bollenbacher  
Bluffton High School  
Bluffton, OH 45817

And a comment from David Kullman, Miami University:

A bit of elementary trigonometry leads to an easy derivation of the formula:



$$\cos \theta = \frac{d}{|b_1 - b_2|} = \frac{1}{\sqrt{1 + m^2}}$$

where  $b_1$  and  $b_2$  are the y-intercepts, and  $m$  is the common slope. Therefore,

$$d = \frac{|b_1 - b_2|}{\sqrt{1 + m^2}}$$