1077-VC-2798   **Robert D. Poodiack*** (`rpoodiac@norwich.edu`), Department of Mathematics, Norwich
University, 158 Harmon Drive, Northfield, VT 05663. *Generalized trigonometric substitution.*

On a generalized unit circle $|x|^p + |y|^p = 1$, $p \geq 1$, we de fine generalized sine and cosine functions to represent the coordinates of points on this curve. We use these generalized trigonometric functions to expand the class of functions integrable via trigonometric substitution. We also relate the inverses of our generalized trigonometric functions to hypergeometric functions. (Received September 22, 2011)