1003-Q1-793    **Kathleen Cage Mittag*** (`kmittag@utsa.edu`), Mathematical Sciences Department, 6900 Loop 1604 West, San Antonio, TX 78249, and **Sharon E. Taylor**. *Enhancing the Teaching and Learning of Quadratic Equations by Using Handheld Technology.*

After teaching algebra for many years in both high school and college, we noticed that our students were still having trouble with the geometric and algebraic concepts involved in solving quadratic equations. Typically, students are taught to solve quadratic equations by first factoring then using the quadratic formula if factoring did not work. Students seldom were taught to first graph the quadratic equation and use the fundamental theorem of algebra to estimate the zeros. Multiple representations are now very important in mathematics pedagogy. To enhance student learning, we would usually end up solving one factorable quadratic equation seven ways which reinforced the idea of multiple representation. The three "ancient" methods we use are: 1) factoring, 2) completing the square and 3) quadratic formula. The four "modern" methods all use the graphing calculator and include: 4) graphing using the [CALC]feature; 5) a quadratic formula program; 6) the [TABLE] feature; and 7) the [SOLVER] feature. The activity we will demonstrate in this paper will illustrate the seven ancient and modern methods for solving quadratic equations. (Received September 29, 2004)