1014-L1-1578 Ronald Harshbarger* (ronharsh@hargray.com), 1 University Blvd, Hilton Head, SC 29928, and Lisa S. Yocco (lisay@georgiasouthern.edu), P.O. Box 8093, Georgia Southern University, Statesboro, GA 30460. Technology and Linear Programming in a Finite Mathematics Course.

How can a car rental agency maximize its profit subject to constraints on the amount of money it has to invest and the number of cars it can use? This linear programming problem in two variables can be solved with the assistance of a graphing calculator, which helps find the feasible region for the problem and the optimal values. However, determining the feasible region and its corners can be confusing if there are several constraint inequalities. So it is frequently easier to solve these problems by graphing with intercepts, and finding the corners by solving systems of equations algebraically. Additionally, solving linear programming problems in three or more variables can be quite difficult with analytic methods. The simplex method requires numerous steps and matrix manipulations. An alternative to this method is to solve the linear programming problem using Excel. If a solution to a linear programming problem exists, the solution can be found quickly using Excel. However, extra work is required to determine if the solution is unique and to find other solutions if they exist. Excel also provides additional information, such as sensitivity analysis. (Received September 28, 2005)