GRAPHING CALCULATOR ESSENTIALS

I. FIND X-INTERCEPTS (ZEROS OF FUNCTIONS) (p. 340)

A. Zero (root) feature [2nd] CALC 2 ; Left Bound? - Right Bound? - Guess?

II. SOLVE EQUATIONS

A. Using x-intercepts (zeros) - (p. 235)
   (1) Rewrite equation so that one side is zero
   (2) Enter other side of equation on [Y=] screen
   (3) [GRAPH] and find x-intercepts (see I above)

B. Using points of intersection (p. 479)
   (1) On [Y=] screen, enter one side of equation as Y_1, the other as Y_2
   (2) [GRAPH] Y_1 and Y_2
   (3) Find x-coordinate of point(s) of intersection
      (a) Intersect feature - [2nd] CALC 5 ;
      First curve? - Second curve? - Guess?

III. GRAPH EQUATIONS (2-variable) & FUNCTIONS

A. Write equation with y isolated on left side (i.e., solve for y)
B. Enter right side on [Y=] screen
C. Set up viewing window (standard window is [ZOOM] 6)
D. [GRAPH] equation
E. Adjust window (using [WINDOW], [TRACE], and/or [ZOOM]) for best view

IV. FIND FUNCTION VALUES - 2 methods :

A. Table feature (in "ASK" mode) : [2nd] Tbl Set (Indpnt: Ask) - [2nd] TABLE; [ENTER] x value

B. Value feature : [2nd] CALC 1; [ENTER] x value

V. FIND Y-INTERCEPT

A. Find function value for x = 0 (i.e., find f(0)) (see IV above)

VI. FIND MINIMA, MAXIMA, AND TURNING POINTS (p. 297, 298, 334)

A. Minimum feature : [2nd] CALC 3 ; Left Bound? - Right Bound? - Guess?
B. Maximum feature : [2nd] CALC 4 ; " " " " "

VII. USE REGRESSION CAPABILITIES

A. See handout "Steps in working regression problems"

STEPS IN WORKING REGRESSION PROBLEMS (TI-82)

(1) Turn on Stat Plot - [2nd] STAT PLOT 1 [ON]

(2) Clear lists - [STAT] (EDIT) 1 ; [▲] to move marker over L1 ; [CLEAR] ; [▼] ; repeat to clear other lists

(3) Enter data - [STAT] (EDIT) 1 ; enter in L1 column each "x" value followed by [ENTER] ; [▶] to go to L2 ; enter in L2 column each "y" value followed by [ENTER]

(4) Plot data (scatter diagram) - [ZOOM] 9 (window is set automatically)

(5) Fit regression line* - [STAT] (CALC) 5 [ENTER] → [y = ax + b ; a = ; b = ; r = (correlation coefficient)]

(4, TI-83)

(6) Enter regression equation on Y= screen - [Y=] [VARS] 5 (EQ) 7

(1, TI-83)

(7) Find desired function values - [2nd] TABLE (in ASK mode)

* Linear regression - for nonlinear regression types, see [STAT] CALC menu on calculator