Name: _____ Date: _____

How to Do Page 168 Example 2 Using TI-83/84

Use TI-83/84 to graph function $h(t) = -490t^2 + 150t + 25$ and determine characteristics of the corresponding graph.

1. Enter the equation in the Y= screen.
   - Press ⌷Y=⌷ .
   - Enter the equation using x for the variable.
   - Press **−490** ⌷X,T,θ,n⌷ ⌷x²⌷⌷+⌷**150** ⌷X,T,θ,n⌷ ⌷+⌷**25** ⌷ENTER⌷
     as shown in Figure 1.

Figure 1

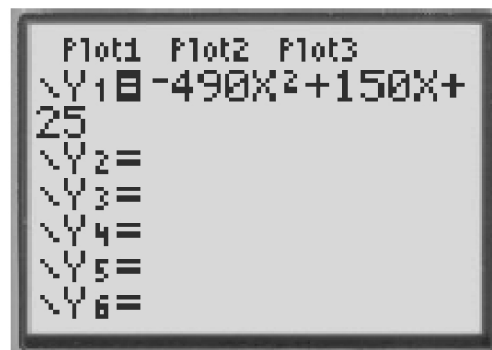**2.** To help determine the window, you can explore how the function changes for different values of x by using the table in AUTOMATIC mode.
   - Press ⌷2nd⌷⌷WINDOW⌷ for TBLSET.
   - For AUTOMATIC mode, the numbers in the top two lines set the starting value of x and the increment of x.

   If you wish to start at $x = -2$ and increment by 1, then move the cursor to the TblStart line and press −2 ⌷ENTER⌷ .

   - Move the cursor to the ΔTbl line and press **1** ⌷ENTER⌷ .
   - For both the Indpnt line and Depend line, move the cursor to Auto and press ⌷ENTER⌷ so that Auto is highlighted. See Figure 2.
   - Press ⌷2nd⌷⌷GRAPH⌷ – You are now in TABLE Screen

Figure 2

Figure 3

   - You can scroll up and down the table using the up and down arrow. From Figure 3, note that the function output is positive for an interval of x between −1 and 1.

3. Enter a window and graph the function.
  • Press WINDOW. A possible window for this function is shown in Figure 4.
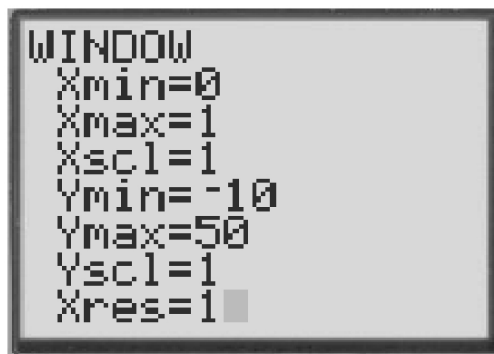 • Press GRAPH. You will see Figure 5.

Figure 4
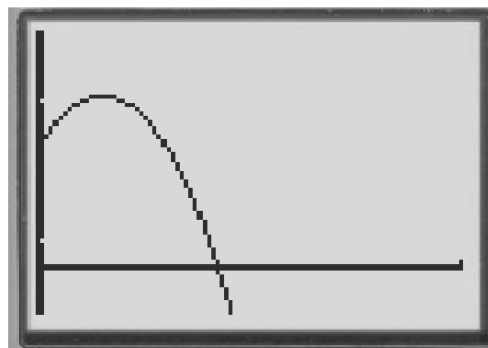

Figure 5

4. Find the *y*-intercept.
  • Press TRACE.
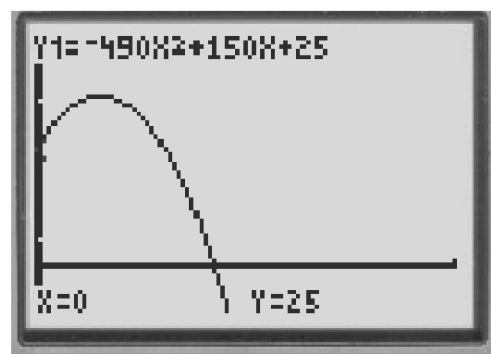 • To enter $x = 0$, press **0** ENTER. You will see Figure 6.

Figure 6

5. Find the maximum.
  • Press 2nd TRACE.
  • Select 4: maximum and then ENTER as shown in Figure 7.

Figure 7

- To enter a left boundary, move the cursor anywhere to the left of the maximum and press ENTER.
- To enter a right boundary, move the cursor anywhere to the right of the maximum and press ENTER.
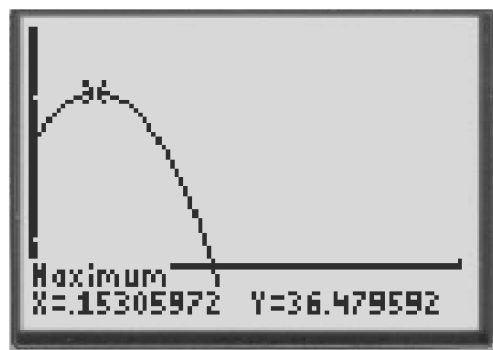- To enter a guess, use the same value you used for the right boundary and press ENTER. See Figure 8.

Figure 8

6. Find the value of *x* when *y* equals zero.
- Press 2nd TRACE.
- Choose 2: zero and press ENTER.
- To enter a left boundary, move the cursor anywhere to the left of the *x*-intercept and press ENTER.
- To enter a right boundary, move the cursor anywhere to the right of the *x*-intercept and press ENTER.
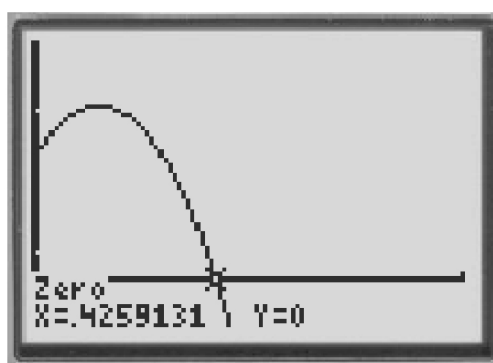- To enter a guess, use the same value you used for the right boundary and press ENTER. See Figure 9.

Figure 9

7. Find the value of *y* when *x* = 0.25.
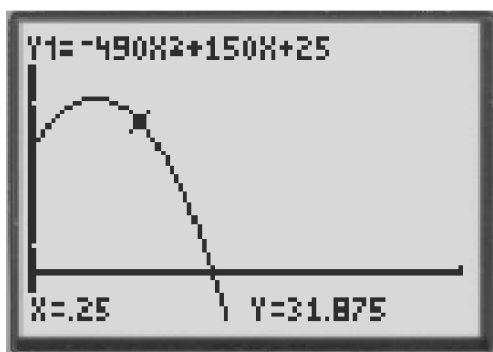- Press TRACE.
- Press .25 ENTER. See Figure 10.

Figure 10