

A model that relates the median annual salary (in thousands of dollars) of females F , and males M , in the United States is given by

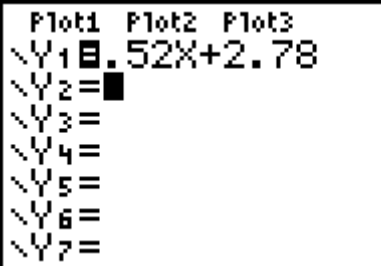
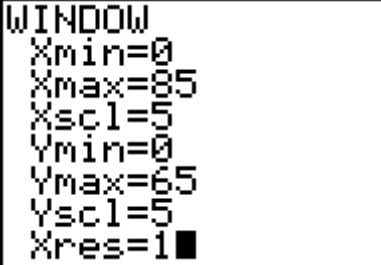
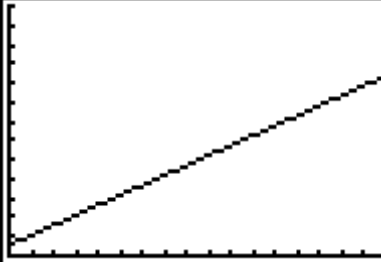
$$F = 0.52M + 2.78$$

- a. Use a graphing calculator to graph this function on the viewing window $[0, 85]$ by $[0, 65]$.

To graph this on a graphing calculator, we need understand what is meant by the window $[0, 85]$ by $[0, 65]$. This means that the graphing window will need to be set to

$$X_{\min} = 0, X_{\max} = 85, Y_{\min} = 0, Y_{\max} = 65$$

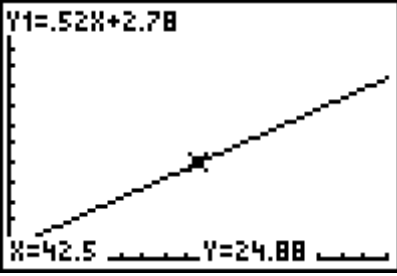
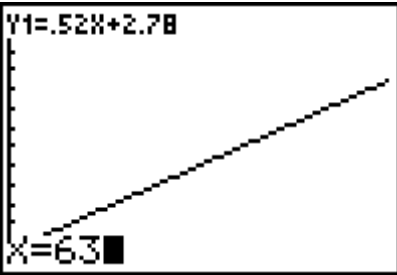
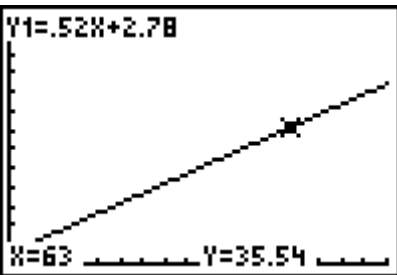
Follow steps below to carry this out.

<ol style="list-style-type: none"> 1. Press $\boxed{Y=}$ to enter the equation editor. 2. Enter the equation as shown to the right. Use X instead of M by using the $\boxed{X,T,\theta,n}$ button. 	
<ol style="list-style-type: none"> 3. Press \boxed{WINDOW} to adjust the viewing window. 4. Enter the values shown to the right. 	
<ol style="list-style-type: none"> 5. Press \boxed{GRAPH} to see the function. 	

- b. Use the graphing calculator to find the median female salary corresponding to a male salary of \$63,000.

The easiest way to find the female salary corresponding to a male salary of \$63,000 is to use the TRACE utility. This allows you to supply the x value corresponding to a male salary of \$63,000 or

$x = 63$, and the calculator finds the corresponding y value. We are using 63 since the inputs are scaled in terms of thousands of dollars. From the graph we found above:

<p>1. Press TRACE. On the screen you'll see an x value and a corresponding y value from the function. You can change this value using the cursor control buttons ◀ or ▶. You can also simply type an x value as shown below.</p>	 <p>The calculator screen displays the function $Y1 = .52X + 2.78$. A cursor is positioned on the graph at the point $(42.5, 24.88)$. The x-axis is labeled $X=42.5$ and the y-axis is labeled $Y=24.88$.</p>
<p>2. Type 63ENTER to find the corresponding y value for a male median salary of \$63,000.</p>	 <p>The calculator screen displays the function $Y1 = .52X + 2.78$. The cursor is positioned at $X = 63$ on the x-axis.</p>
<p>3. The y value shown corresponds to 35.54 thousand or \$35,540.</p>	 <p>The calculator screen displays the function $Y1 = .52X + 2.78$. The cursor is positioned on the graph at the point $(63, 35.54)$. The x-axis is labeled $X=63$ and the y-axis is labeled $Y=35.54$.</p>