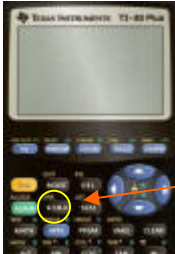


## Evaluating a function

These directions fit the TI-83, 83 plus, 84

Suppose you want to substitute  $x = -3$  into the expression  $3x^2 - 5x + 3$

1. Press the blue **Y=** button at the top left
2. If there is already an expression at  $\backslashY1=$ , press the **CLEAR** button (under the arrow keys)
3. Enter your expression. You enter an X using the **X,T,θ,∩** button that is down and left from the 2nd button.



4. It will look like  $\backslashY1=3X^2-5X+3$  or you could have used the "x squared" key. The **^** key means raise to the power following the  $\wedge$ .  $x^4$  means  $x^4$ .

```

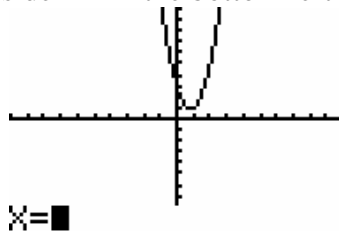
Plot1 Plot2 Plot3
\Y1=3X^2-5X+3
\Y2=
\Y3=
\Y4=
\Y5=
\Y6=
\Y7=
    
```

5. Press **2nd**
6. Press **TRACE** (four buttons to the right from the Y= button)

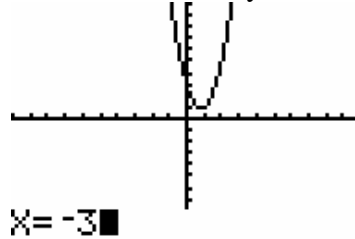
```

CALCULATE
1:value
2:zero
3:minimum
4:maximum
5:intersect
6:dy/dx
7:∫f(x)dx
    
```

7. Press either **ENTER** or the 1 to choose 1:value from the CALCULATE menu
8. You will see a blinking cursor beside X= in the bottom left of the screen.



9. Enter the number you want to substitute in for x (-3 in our example above). Be sure you use the (-) key for negative, and not the subtract key.



10. Press **ENTER**

11. If you see  
**ERR: INVALID**  
**QUIT**  
**Z: Goto** you need to fix the Window. You can only test values of X that fit in the domain of the screen.

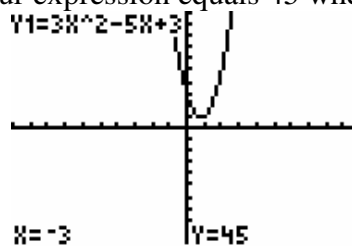
- Press the **WINDOW** key. (it is to the right of Y=)
- Change the Xmin and/or Xmax so that the numbers you want to test fit in between them. (If you want to test 25, you could change your Xmax to 30)

```

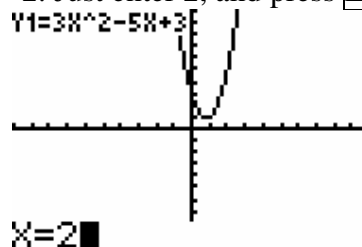
WINDOW
Xmin=-10
Xmax=25
Xscl=1
Ymin=-10
Ymax=10
Yscl=1
Xres=1

```

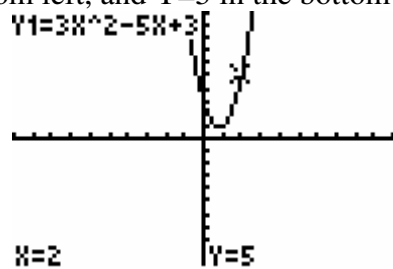
12. If all went well, you will see X=-3 in the bottom left of the screen, and Y=45 in the bottom right. That means that your expression equals 45 when -3 is substituted in for x.



13. To continue testing more numbers, just enter another number to test. Suppose you want to evaluate the expression for x = 2. Just enter 2, and press **ENTER** again.



14. You will see  $X=2$  in the bottom left, and  $Y=5$  in the bottom right.



15. If you have other brands, try the online calculator manuals.  
[http://www.prenhall.com/divisions/esm/app/calc\\_v2/](http://www.prenhall.com/divisions/esm/app/calc_v2/)