

Section 5.1 Polynomials
Section 5.3 Multiplying Polynomials

INSTRUCTOR NOTE

Evaluating polynomial expressions using the graphing calculator is not a course objective; however, you may wish to use the calculator to confirm results found using “paper and pencil” methods.

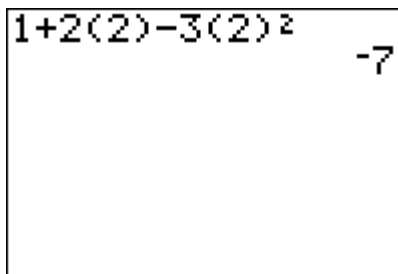
1. Evaluating polynomials.

Example 1: Evaluate the polynomial $1 + 2x - 3x^2$ for

a. $x = 2$

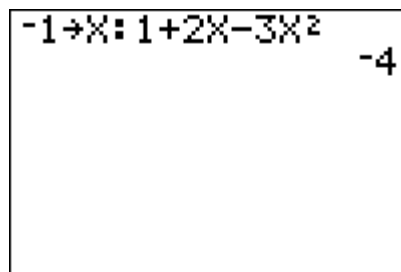
b. $x = -1$

Solution: a. Using Home Screen substitution.



1+2(2)-3(2)² -7

b. Using the STO key.



-1→X:1+2X-3X² -4

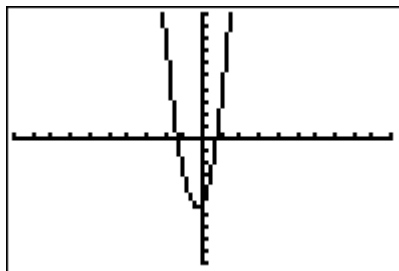
INSTRUCTOR NOTE

Verifying the answers to polynomial addition, subtraction, multiplication, and factorization is NOT a course objective. You may choose to include the topics below or not, at your discretion.

2. The calculator may be used to visualize addition, subtraction, and multiplication of polynomials in one variable.

Example 2: Confirm that the difference of the polynomials
 $(2x^2 + 5x - 1) - (4 + 2x - 3x^2) = 5x^2 + 3x - 5$

Solution: Let Y1 = the left side of the equation, let Y2 = the right side of the equation, and graph the equations on the same screen to see if the graphs coincide.



Students can also scroll through the table to see that the corresponding ordered pair solutions are the same.

X	Y1	Y2
0	-5	-5
1	3	3
2	21	21
3	49	49
4	87	87
5	135	135
6	193	193

X=0

INSTRUCTOR NOTE

Although this is not "proof" that the answer is correct, it at least may provide students with an idea that their solution is reasonable.