

Assignment 1: Expressions and Functions (0.1) Name _____
Please provide a handwritten response.

1a. The TI calculators denote addition by + , subtraction by - , multiplication by * , and division by ÷ . For example, $\frac{3.017(56 + 45.26)}{-97.3}$ would be represented on the TI calculators by $3.017*(56 + 45.26) \div (-97.3)$. Execute this command and record the result below.

1b. Exponents are denoted on the TI calculators using the ^ symbol located on your keyboard for all powers higher than 3. You may indicate squares and cubes of numbers using either the built-in features of the calculator or by using the ^. Enter the following problems on your calculator, execute them by pushing **ENTER**, and record the results below

Problem	TI-83 Plus/TI-84 Plus	TI-86
4^2	^ is on the keyboard	^ is on the keyboard
4^2	Use the x^2 key on the keyboard to enter the exponent.	Use the x^2 key on the keyboard to enter the exponent.
5^3	^ is on the keyboard	^ is on the keyboard
5^3	Use the 3 found in MATH 3	You must enter 5^3 as above
$27^{(1/3)}$	You must use the parentheses	You must use the parentheses
$\sqrt[3]{27}$	Use the $\sqrt[3]{}$ found in MATH 4	$\sqrt[3]{}$ is found in MATH (2ND X) MISC MORE F4 . Enter as $3\sqrt[3]{27}$
$\sqrt{25}$	Use the $\sqrt{}$ found above the x^2 key	Use the $\sqrt{}$ found above the x^2 key
$\sqrt{26}$	Note the TI-83 Plus/TI-84 Plus returns 9 decimal places when set on Float (find by pressing MODE). You can specify the number of decimal places by arrowing to the desired number and pressing ENTER .	Note the TI-86 returns 11 decimal places when set on Float (found by pressing MODE (2ND MORE)). You can specify the number of decimal places by arrowing to the desired number and pressing ENTER .

2a. These same operations can be applied to a variable, x , to create algebraic expressions for the TI-calculators. You enter these in the graphical menu as follows:

Problem	TI-83 Plus/TI-84 Plus	TI-86
$Y_1 = \frac{x^2 + 7x - 11}{x^2 - 4}$	Use the Y= key to find $Y_1 =$. Enter the expression using parentheses around both the numerator and the denominator	Find y1 = from GRAPH F1 Enter the expression using parentheses around both the numerator and the denominator

2b. There are several ways a function like this one can be evaluated at a specific point using the TI calculators. Evaluate $f(x) = \frac{x^2 + 7x - 11}{x^2 - 4}$ as indicated in the following chart (you must have entered $y1 = f(x)$ before you start. Record your results below.

Problem	TI-83 Plus/TI-84 Plus	TI-86
f(2.3)	From VARs Y-VARS 1 (function) get Y₁ and add Y₁(2.3) . Execute by pressing ENTER	Type 2nd ALPHA 0 (the 'y' is above the 0) to get the y . Then add y1(2.3) and press enter.
Evaluate at x = 2.3	From the CALC menu (2ND TRACE) choose option 1 (value) and press ENTER . When the X= appears type in 2.3 and press ENTER	2ND ÷ gives you the CALC menu. Choose F1 evalF (y1, x, 2.3) . Press ENTER to evaluate.

3a. Now evaluate $f(-2.3)$ in two ways and $f(2)$ in two ways and record your results below. Why do you obtain an error message when you attempt to evaluate $f(2)$?

3b. For $f(x) = \sqrt{x+1}$ evaluate $f(0)$, $f(3)$, $f(-1)$, $f\left(\frac{1}{2}\right)$ and record your results below.