TI 83/84: Using Good Parentheses.

It's important when you enter expressions in your calculator to use parentheses to get the correct order of operations.   (If you have a newer calculator, you may not need to worry about this – the calculator will write expressions the same way we handwrite them.)   Here are some examples:

(1) $y = |2x - 5| + 4$ becomes y=abs(2x-5)+4

(2) $y = (x + 5)^2 - 1$ becomes y=(x+5)²-1

(3) $y = \dfrac{x + 2}{3x - 1}$ becomes y=(x+2)/(3x-1)

(4) $y = \dfrac{2x}{x + 3}$ becomes y=2x/(x+3) or y=(2x)/(x+3)

(5) $y = \sqrt{2x + 7} - 4$ becomes y= √ (2x+7)-4

(6) $y = (4x + 1)^3 - 7$ becomes y=(4x+1)^3-7

(7) $y = \dfrac{3}{x} + \dfrac{x + 1}{2} + \dfrac{2}{5x}$ becomes y=3/x+(x+1)/2+2/(5x) or y=(3)/(x)+(x+1)/(2)+(2)/(5x)

(you can never have too *many* sets of parentheses, as long as they're grouping properly...but you definitely can have too *few*!)

(8) $y = \dfrac{1}{3 + \sqrt{x - 2}}$ becomes y=1/(3+ √ (x-2))

(9) $y = \dfrac{3x}{x^2 + 5}$ becomes y=3x/(x^2+5) or y=(3x)/(x^2+5)

(10) $y = (x + 1)^2 - 3$ becomes y=(x+1)²-3

(11) $y = \sqrt[3]{4x + 7} - 2$ becomes y=(4x+7)^(1/3)-2 or y= ³√ (4x+7)-2

(12) $y = \sqrt[4]{x^2 + 3} - 5$ becomes y=(x^2+3)^(1/4)-5 or y= 4 ˣ√ (x^2+3)-5

Practice for Entering Algebraic Expressions into the Calculator

*Write each equation **horizontally** using "one-line" notation as shown in the examples. Use **parentheses** for any binomial or bigger piece <u>inside a numerator</u>, <u>roots</u> or <u>the absolute value bars</u>. Use **parentheses** for any <u>denominators with more than a single entry, like 2x and 2x-5</u>.*

(1) $y = |x+5| - 3$ becomes _____

(2) $y = (x+3)^2 - 8$ becomes _____

(3) $y = \dfrac{x-4}{6x+5}$ becomes _____

(4) $y = \dfrac{3x}{x-4}$ becomes _____

(5) $y = \sqrt{5x+4} - 6$ becomes _____

(6) $y = (7x-1)^3 + 9$ becomes _____

(7) $y = \dfrac{4}{x} + \dfrac{3x-2}{2+x} + \dfrac{7}{3x}$ becomes _____

(8) $y = \dfrac{1}{2-\sqrt{x+9}}$ becomes _____

(9) $y = \dfrac{4x}{x^3-7}$ becomes _____

(10) $y = (5x-11)^2 + 7$ becomes _____

(11) $y = \dfrac{3x+5}{4x-7}$ becomes _____

(12) $y = \dfrac{7x}{\sqrt{x+3}}$ becomes _____

(13) $y = \sqrt[3]{4x-5} + 2$ becomes _____

(14) $y = \dfrac{1}{x+2} - \dfrac{3}{x+4}$ becomes _____

(15) $y = \dfrac{1}{2x} + \dfrac{3}{4x} - \dfrac{5}{6x}$ becomes _____

Solutions for Entering Algebraic Expressions into the Calculator

Note: usually only one way is shown for each; there are other correct ways.

(1) $y = abs(x+5) - 3$

(2) $y = (x+3)^2 - 8$

(3) $y = (x-4)/(6x+5)$

(4) $y = (3x)/(x-4)$

(5) $y = \sqrt{}(5x+4)-6$

(6) $y = (7x-1)\text{^}3 + 9$

(7) $y = 4/x + (3x-2)/(2+x) + 7/(3x)$

(8) $y = 1/(2-\sqrt{}(x+9))$

(9) $y = (4x)/(x\text{^}3-7)$ or $y = 4x/(x\text{^}3-7)$

(10) $y = (5x-11)^2 + 7$

(11) $y = (3x+5)/(4x-7)$

(12) $y = (7x)/(\sqrt{}(x+3))$ or $y = 7x/(\sqrt{}(x+3))$

(13) $y = (4x-5)\text{^}(1/3) + 2$ or $y = \sqrt[3]{}(4x-5)+2$

(14) $y = 1/(x+2) - 3/(x+4)$

(15) $y = 1/(2x) + 3/(4x) - 5/(6x)$

Practice for Equation Graphing

Match the equations at left with their correct graphs at right. These are all shown in the standard window. This exercise is meant to help you practice using parentheses correctly.

(A) $y = \dfrac{x+1}{x}$

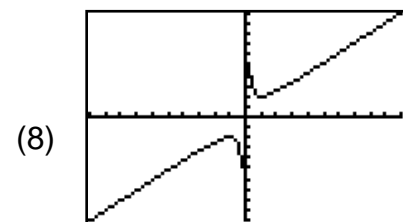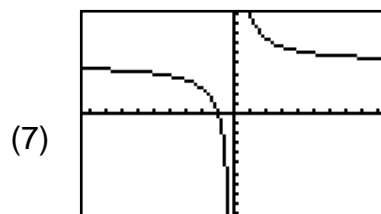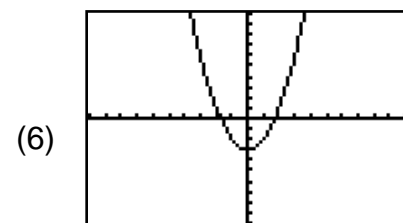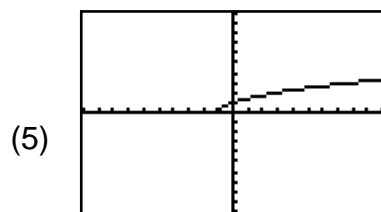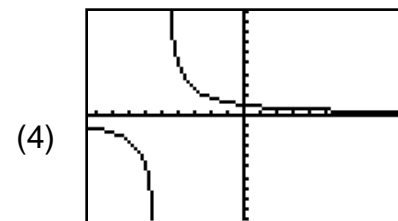(B) $y = x + \dfrac{1}{x}$

(C) $y = (x-3)^2$

(D) $y = x^2 - 3$

(E) $y = \sqrt{x} + 1$

(F) $y = \sqrt{x+1}$

(G) $y = \dfrac{5}{x} + 5$

(H) $y = \dfrac{5}{x+5}$

(1)

(2)

(3)

(4)

(5)

(6)

(7)

(8)
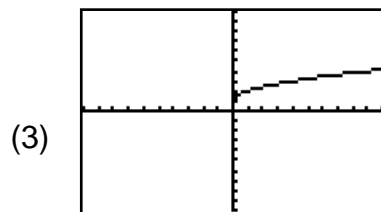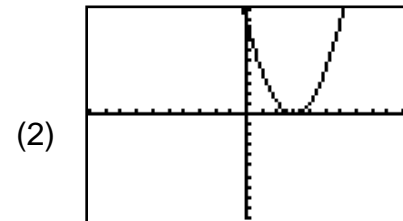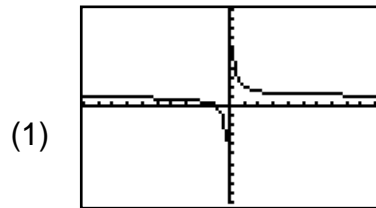
Solutions for Equation Graphing

(A) 1   (B) 8   (C) 2   (D) 6   (E) 3   (F) 5   (G) 7   (H) 4