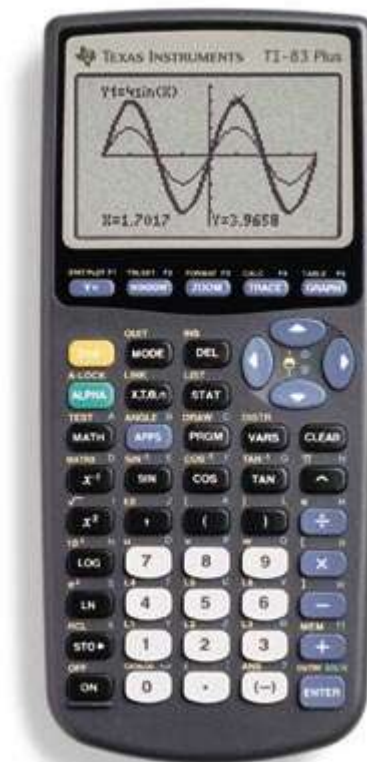


# "The Basics"



*TI-83/84 Plus Graphing Calculator*

## GETTING STARTED

### Calculator Basics

- Product number and ID: **2nd****+** [MEM]
- Turning off the calculator: **2nd** **ON** [OFF] (calculator has Automatic Power Down that shuts off calculator after 5 min. of inactivity)
- Adjusting the contrast: **2nd****▼** to lighten or **2nd** **▲** to darken  
(40 settings: See **0** through **9** in upper right corner)

### The Keypad

- Numbers, basic operations, primary function
- Secondary functions: **2nd** key -- Use for anything in yellow lettering (blue on TI-84)
- Alpha function: displays alphabet characters **ALPHA** green lettering
  - **2nd****ALPHA** [A-LOCK] to lock in the alpha keys

### Homescreen Basics

When you first turn on your calculator you will see your *home screen*. This is the screen you use to perform most arithmetic operations.

- 8 lines w/ max of 16 characters per line; text scrolls from one line to next
- **CLEAR**: hit once to clear the line; hit twice to clear the entire homescreen
- **ENTER** to complete expression (=)
- **DEL**: Deletes a character at the cursor; this key repeats
- **2nd****DEL** (INS): Inserts characters in front of the underline cursor; to turn off press **2nd****DEL** again or hit an arrow key
- **STO▶** To store value to a variable
- **2nd****(-)** (ANS): Recall the last answer and use within an expression
  - Use the previous answer as the first entry in the next expression without typing **2nd****(-)** (ANS) by simply typing an operation symbol (or **STO▶** )
- **2nd****ENTER** (ENTRY): You can access previous entries (up to 128 bytes stored in memory)
  - To scroll up through entries, press **2nd****ENTER** [ENTRY] repeatedly
- To enter multiple entries on single line -- Use **ALPHA** **.** [:] to separate expressions

## Checking the default settings

Hit the **MODE** key.

Make sure your screen looks like this:

```
Normal Sci Eng
Float 0123456789
Radian Degree
Func Par Pol Seq
Connected Dot
Sequential Simul
Real a+bi re^θi
Full Horiz G-T
```

If not, use your **▲** or **▼** arrow to highlight the changes and hit enter.

When entering an arithmetic expression into the calculator, always think about the **order** in which you want the operations to be completed.

You may need to use *parentheses* **( )** to maintain the correct **Order of Operations**.

**Multiplication** can be indicated in three ways:

- **⊗** It shows up on the screen as an asterisk \*
- parentheses ( )
- implied multiplication when using variables (2A) or defined constants ( $5\pi$ )

## Exponents

- Enter an exponent using the **^** key.  
Ex:  $3^4$  would be entered as **3 ^ 4**
- If you are *squaring*, you can also use the **x<sup>2</sup>** key.  
Ex:  $5^2$  would be entered as **5 x<sup>2</sup>**

## Radical signs (roots)

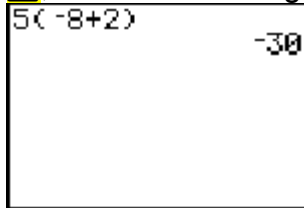
- If you want the *square root*, hit **2nd** **x<sup>2</sup>**  $\sqrt{\quad}$
- If you want the *cube root*, go to the **MATH** menu and **select 4:**  $\sqrt[3]{\quad}$
- For *all other roots*, enter the root index first on the homescreen and then go to the **MATH** menu and **select 5:**  $\sqrt[\quad]{\quad}$

```
MATH NUM CPX PRB
1: Frac
2: Dec
3:
4:  $\sqrt{\quad}$ 
5:  $\sqrt[\quad]{\quad}$ 
6: fMin<
7: fMax<
```

Let's try some examples.

1. Find the value of  $5(-8 + 2)$ .

Using the calculator buttons, type in the example exactly as you see it and press **ENTER** when you are done. (Make sure you use the negative sign in the bottom row **(-)**, not the minus sign **(-)**). You should see this screen.



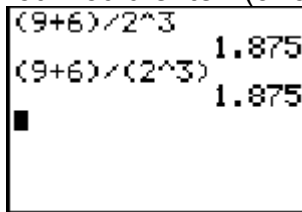
The answer will appear on the right side of the screen

2. Evaluate  $\frac{9+6}{2^3}$

You want the calculator to add  $9 + 6$  first then divide by  $2^3$ .

To enter this on your calculator you must use parentheses around the expression in the numerator.

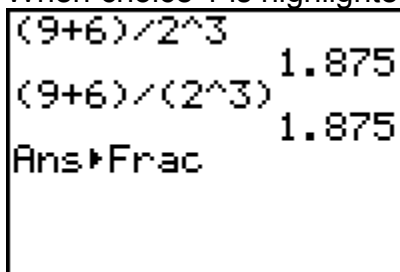
You would enter:  $(9+6)/2^3$  or  $(9+6)/(2^3)$  Press **ENTER**.



Suppose you want this answer in fraction form. Press **MATH**. Choice # 1 is Convert to Fraction.

**MATH** NUM CPX PRB  
1: **Frac**  
2: **Dec**  
3: **3**  
4: **√**  
5: **√**  
6: **fMin(**  
7: **fMax(**

When choice 1 is highlighted, hit **ENTER**. Your screen should look like this:



Hit **ENTER** again and your answer will appear in fraction form.

```
(9+6)/2^3      1.875
(9+6)/(2^3)    1.875
Ans>Frac      15/8
█
```

### The Absolute Value Function

To use the absolute value function, press **MATH** and scroll right to **NUM**.

```
MATH NUM CPX PRB
1:abs(
2:round(
3:iPart(
4:fPart(
5:int(
6:min(
7↓max(
```

The first choice is absolute value.

For example, to calculate  $|4 - 13|$ , you would enter

**MATH: NUM 1: abs(**

Then enter the expression 4 - 13, close the parentheses and hit **ENTER**.


```
abs(4-13)      9
█
```

**CATALOG:** Press **2nd|0** [CATALOG] to access an alphabetical list of all functions and instructions

### Error Messages (e.g. SYNTAX, DIVIDE BY 0)

- When the calculator encounters an error it will often give you two options:
  - 1: Quit
  - 2: GOTO

Choose **GOTO** when given the option. It will take you to the spot in your entry where the error occurred. You can then edit your entry as necessary.



```
ERR:SYNTAX  
1:Quit  
2:Goto
```