

## **Important Calculator Skills**

### **Order of Operations (Exponents and Grouping Symbols)**

1. Insert parentheses around the entire base of the exponential expression as needed
  - a. Example: To calculate  $(2 + 6)^2$ , type  $(2 + 6)$  first
2. Select “^” to indicate an exponent
3. Type the desired exponent
  - a. To input a negative number, press (-) before typing the number
4. Press “ENTER” to evaluate

### **Absolute Value:**

1. Select “MATH” button
2. Scroll right to the “NUM” menu
3. Select “ABS(“ which should be option 1. This is the absolute value function
4. Enter your number or expression inside the parenthesis
  - a. Example: ABS (-7) will return 7
5. Press “ENTER” to see the result

**Example:** Page 143, 3.008: Evaluate

$$\frac{(2 + 6)^2}{4 \times 9 - 4}$$

### **Additional Practice:**

- Page 142 #3.006
- Page 167 #5.042
- Page 174 #6.011

**How to enter fractions on your calculator:**

**TI-83:** Fractions are entered as division between two integers using parentheses and the division operator

- How it might look on your calculator:  $(4/5) - (3/7)$

**TI-84: Steps**

1. Select “**ALPHA**”
2. Select “**Y=**” to open the frac menu
3. Choose one of the following
  - a. “**n/d**” for a simple fraction (numerator/denominator)
  - b. “**U n/d**” for a mixed number (whole number + fraction)

**Example:** page 131, 2.031:

$$7\frac{2}{3} - 2\frac{3}{4}$$

**Additional Practice:**

- Page 129 #2.029

**Converting decimals to fractions:**

**TI-83 and TI-84:**

1. First enter your decimals
  - a. Ex. 14.85+14.52
2. Then select “MATH”
3. Select “FRAC” to convert the result to a fraction
  - a. The answer should display as 14.85+14.52>Frac, Answer
4. Press “ENTER” to see the fractional form of the result

**Example:** Page 124 #2.042:

$$13.53 + 7.385$$

**Additional Practice:**

- Page 125 #2.044
- Page 125 #2.045

**Convert percents to fractions:**

1. Divide the percent by 100 to convert to a decimal
  - a. Example: 25% divided by 100 becomes 0.25
2. Select “MATH”
3. Then Select “FRAC” to convert the decimal into a fraction
4. Press “ENTER” to see the result
  - a. Example: 0.25 becomes 1/4

**Example:** Page 145, 4.020: Write 75% as a fraction in the simplest form.

**Additional Practice:**

- Page 153 #4.021
- Page 153 #4.023

## **Radical and Fractional Exponents**

### **Fractional exponents:**

1. Insert parentheses around the entire base of the exponential expression when applicable
  - o Example: To evaluate  $(4/5)^2$ , type  $(2 + 6)^2$
2. Select the “ $\wedge$ ” key
3. Type the numerator
4. Press the “ $\div$ ” key
5. Type the denominator of the exponent
6. Press “ENTER”
7. What it might look like in your calculator
  - o  $(4/5) ^2$
  - o  $((4) ^4 / (5))$

### **Radicals:**

1. Select “MATH”
2. Choose menu option 5 “ $\sqrt[x]{( )}$ ” to insert the square root function
3. Type the number or expression inside the parenthesis
4. Press “ENTER” to evaluate
  - a. Example:  $\sqrt[2]{(25)}$  returns 5

**Example:** Page 225 #8.035:

**Evaluate the following. Write “Not a real number” if applicable**

a.  $(-32)^{\frac{1}{5}}$

b.  $(-25)^{\frac{1}{2}}$

### **Additional Practice:**

- Page 211 #7.090

## Entering Functions and Table of Values

Enter your function rule:

1. Press the “Y=” button to open the function editor
2. Type in the left-hand side of the function (e.g.,  $y = 2x + 1$ )
  - a. Press “X,T,θ,n” to enter in your variable
3. To view table of values
  - a. press “2<sup>ND</sup>” and then “GRAPH” to open the table

x	y
-1	
0	
1	
5	

**Example:** Page 184 #6.071:

**Fill in the table using the function rule**

$$y = -10x + 1$$

x	f(x)
-8	
-7	
-3	
74	

**Additional Practice:**

- Page 225 #8.033:

## Graphing Functions

1. Press “**Y=**” to open the function editor
2. Enter your function in one of the lines
  - a. Example:  $Y1=2X+3$
3. Press “**GRAPH**” to display the graph

## Setting the Window

1. Press “**WINDOW**”
2. Adjust the following:
  - a. Xmin: Minimum x-value
  - b. Xmax: Maximum x-value
  - c. Ymin: Minimum y-value
  - d. Ymax: Maximum Y value
  - e. Xscl and Yscl: Scale for tick marks (optional)

## Finding Intercepts

1. y-intercepts
  - a. The y-intercept is where the graph crosses the y-axis.
  - b. On the graph, look at where  $x = 0$ .
  - c. You can also evaluate the function at  $x = 0$  using the “**TABLE**” or “**CALC**” menu.
2. x-Intercepts
  - a. Press “**2<sup>nd</sup>** → “**TRACE**” to access the “**CALC**” menu.
  - b. Choose 2: Zero.
  - c. Move the cursor near the x-intercept.
  - d. Set a left bound, then a right bound, and press “**ENTER**”.
  - e. The calculator will display the x-intercept.

## Finding the intersection of two lines

1. Enter both functions in  $Y1$  and  $Y2$ .
2. Press “**GRAPH**”.
3. Press “**2<sup>nd</sup>** → “**TRACE**” to open the “**CALC**” menu.
4. Choose 5: “**INTERSECT**”.
5. Select the first curve, then the second curve.
6. Move the cursor near the intersection point and press “**ENTER**”.
7. The calculator will show the coordinates of the intersection.