

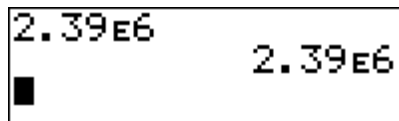
## TI 83/84: Scientific Notation on your calculator

choose the proper **MODE**: Normal or Sci

entering numbers:  $2.39 \times 10^6$  on calculator: 2.39 **2nd** **EE** 6 **ENTER**

reading numbers: 2.39E6 on the calculator means  $2.39 \times 10^6$  for us.

this is above the comma,  
next to the square root!



- When you're in Normal mode, the calculator will write regular numbers unless they get too big or too small, when it will switch to scientific notation.
- In Sci mode, the calculator displays every answer as scientific notation.
- In both modes, you can type in numbers in scientific notation or as regular numbers.

**Humans should never, ever, ever write scientific notation using the calculator's E notation!**

Try these problems. Answer in scientific notation, and round decimals to two places.

<p>(4) <math>\frac{2.39 \times 10^{16}}{4.7 \times 10^{-3}}</math></p>	<p>(5) <math>2.39 \times 10^9 + 4.7 \times 10^{10}</math></p>
<p><math>5.09 \times 10^{18}</math>   <math>-3.76 \times 10^{-1}</math>   <math>2.39 \times 10^5</math>   <math>7.93 \times 10^{-8}</math></p>	<p><math>3.01 \times 10^3</math>   <math>1.07 \times 10^0</math>   <math>2.39 \times 10^5</math>   <math>4.94 \times 10^{10}</math></p>

Remember to change your **MODE** back to Normal when you're done.

### Using the STORE key:

Let's say that you want to store a number so that you can use it later, or that you want to store answers for several different variables, and then use them together in one problem. Here's how:

Enter the number, then press **STO** (above the ON key), then press **ALPHA** and the letter you want. (The letters are in alphabetical order above the other keys.) Then press **ENTER**.

To use your number, press **ALPHA** and then the letter.

5→A	5
3→B	3
A+B	8

To save your number as the variable X, you can use the **X,T,θ,n** key, next to the **ALPHA** key.

Try these problems. Answer fraction problems with a fraction. Circle the correct answer.

<p>(6) <math>3x^2 - 17x + 19</math> where <math>x = -3</math> Store -3 as <math>x</math>, then calculate!</p> <p>97    23    706    5</p>	<p>(7) <math>3x^2 - 17x + 19</math> where <math>x = 7</math> Store 7 as <math>x</math>, then calculate!</p> <p>29    4    165    47</p>
<p>(8) <math>\frac{x-3y}{y^2}</math> where <math>x = 5</math> and <math>y = -8</math> Store your numbers, then calculate!</p> <p><math>\frac{3}{17}</math>    <math>\frac{-87}{5}</math>    <math>\frac{29}{64}</math>    <math>\frac{-1}{117}</math></p>	<p>(9) <math>\frac{x-3y}{y^2}</math> where <math>x = -4</math> and <math>y = 6</math> Store your numbers, then calculate!</p> <p><math>\frac{66}{109}</math>    <math>\frac{-11}{18}</math>    <math>\frac{56}{13}</math>    <math>\frac{1007}{43}</math></p>

If you want to retype something on the calculator, press **2nd** **ENTER** until the line you want reappears.

For the following problems, store the given values in your calculator, then find the answer. Answer with scientific notation rounded to two decimal places.

(14)  $E = mc^2$        $m = 1.654 \cdot 10^{-4}$ ;  $c = 9.8 \cdot 10^8$   
Store your numbers, then calculate!

(15)  $B = \sqrt{a^2 - b^2}$        $a = 2.3 \times 10^{12}$ ;  $b = 1.7 \times 10^{11}$   
Store your numbers, then calculate!

(16)  $R = T \sqrt{1 - \frac{v^2}{c^2}}$        $T = 7200$ ;  $c = 9.8 \cdot 10^8$ ;  $v = 3.5 \cdot 10^8$   
Store your numbers, then calculate!

Try these problems in your calculator, and answer with a fraction.

(17)  $\frac{-2 \cdot 4 + -3}{-7 + -3 \cdot 5} =$

(18)  $\frac{5 \cdot -2 + 6}{37(-2)} =$

Try these problems in your calculator, and answer with a decimal rounded to two places.

(19)  $\sqrt{8.23^2 + 7.22^2} =$

(20)  $\frac{(23 + 12)^2}{2 - 3^2} =$