

# Math in Living C O L O R !!

## 1.03 Calculators

*Intermediate Algebra: One Step at a Time*, Page 27-38: #18, 25, 35, 37.

Dr. Robert J. Rapalje, Retired  
Central Florida, USA

See Section 1.03 with explanations, examples, and exercises, coming soon!

p.38. In the following exercises, you may wish to enter the numbers and operations into the calculator exactly as indicated in the exercise. However, if you have a scientific notation button on your calculator [EE], then you may save a few keystrokes. Enter the keystrokes that will be given within brackets into the calculator. Of course there will be variations based upon different calculators. You can send me an Email and tell me what calculator you are using, and I will try to be more specific for your calculator. If your calculator does NOT have the carat symbol [^] for raising to the power, then look for [ $Y^X$ ]

18. 
$$\frac{7.2 \cdot 10^{12}}{3.5 \cdot 10^{-4}}$$

Solution #1: Type directly as it is given.

[ ( ] [ 7.2 ] [ x ] [ 10 ] [ ^ ] [ 12 ] [ ) ] [ ÷ ] [ ( ] [ 3.5 ] [ x ] [ 10 ] [ ^ ] [ 5 ] [ ) ] [ ^ ] [ - ] [ 3 ]  
[ENTER]

The answer should be  $2.057142857 \cdot 10^{16}$  or  $2.06 \cdot 10^{16}$

Solution #2: Using the scientific notation button [EE].

[ ( ] [ 7.2 ] [ EE ] [ 12 ] [ ) ] [ ÷ ] [ ( ] [ 3.5 ] [ EE ] [ - ] [ 4 ] [ ) ] [ENTER]

The answer should be  $2.057142857 \cdot 10^{16}$  or  $2.06 \cdot 10^{16}$ .

**NOTE:** In this case, using the [EE] button, parentheses are NOT needed! However, be careful for problems like #25-30, in which parentheses ARE required!!

25. 
$$\frac{7.2 \times 10^{12} \cdot 6.3 \times 10^{-8}}{3.5 \times 10^{-4} \cdot 8.1 \times 10^{14}}$$

In this exercise, you will be well served to place parentheses around the numerator and denominator, and use the [EE] notation. Caution: be sure to use parentheses at the beginning and end of the entire fraction, and NOT in between!! It should look like this:

$$\frac{(7.2 \times 10^{12} \cdot 6.3 \times 10^{-8})}{(3.5 \times 10^{-4} \cdot 8.1 \times 10^{14})}$$

[( ) [7.2] [EE] [12] [x] [6.3] [EE] [-] [8] ( ) ] [÷] [( ) [3.5] [EE] [-] [4] ( ) ] [x] [8.1] [EE] [14] ( ) ] [ENTER]

The answer should be  $1.6 \cdot 10^{-6}$ .

35. 
$$(7.2 \cdot 10^{12})^2 \cdot (6.3 \cdot 10^5)^3$$

Solution #1: Type directly as it is given.

[( ) [7.2] [x] [12] [^] [12] ( ) ] [^] [2] [x] [( ) [6.3] [x] [10] [^] [5] ( ) ] [^] [3] [ENTER]

The answer should be  $1.29624 \cdot 10^{43}$  or  $1.23 \cdot 10^{43}$

Solution #2: Using the scientific notation button [EE].

[( ) [7.2] [EE] [12] ( ) ] [^] [2] [·] [( ) [6.3] [EE] [5] ( ) ] [^] [3] [ENTER]

The answer should be  $1.29624 \cdot 10^{43}$  or  $1.23 \cdot 10^{43}$

37. 
$$\frac{(6.3 \times 10^{-8})^3}{(8.1 \times 10^{14})^2}$$

Solution #1: Type directly as it is given.

[( ) [6.3] [x] [10] [^] [-] [8] ( ) ] [^] [3] [÷] [( ) [8.1] [x] [10] [^] [14] ( ) ] [^] [2] [ENTER]

The answer should be  $3.81111 \cdot 10^{-52}$  or  $3.81 \cdot 10^{-52}$

Solution #2: Using the scientific notation button [EE].

[( ) [6.3] [EE] [-] [8] ( ) ] [^] [3] [÷] [( ) [8.1] [EE] [14] ( ) ] [^] [2] [ENTER]

The answer should be  $3.81111 \cdot 10^{-52}$  or  $3.81 \cdot 10^{-52}$

[NOTE: With different calculators there WILL be variations. Send me an Email for clarifications about YOUR calculator!!]