Chem II – Math Preparation

1. Put these numbers in order of magnitude: 2×10^{2}, 1×10^{3}, 4.6×10^{-6}, 1×10^{-7}, 1×10^{-6}, 3.2×10^{-7}

_____ < _____ < _____ < _____ < _____ < _____

2. Compute this on your calculator: $10^{-15} / 3.9\times10^{-7} = ?$

3. solve for x $-3.2 = \log(x)$

4. solve for x $-3.2 = \ln(x)$

5. solve for x $2.87 = 2^{x}$

6. solve for x $x^{2} + 0.8x - 0.03 = 0$ hint: the quadratic formula can be found in the back of the text book

7. solve for x $x^{5} = 0.068$

8. solve for x $\frac{1}{2} = \frac{250}{8}(\frac{1}{x} - \frac{1}{400})$

ANSWERS

1. $1\times10^{-7} < 3.2\times10^{-7} < 1\times10^{-6} < 4.6\times10^{-6} < 2\times10^{2} < 1\times10^{3}$

2. 2.5641×10^{-9} If you got this wrong, you could be using your calculator incorrectly.

Common calculator mistakes:
10^{-15} is the same as 1×10^{-15}, and therefore should be entered as 1E-15, not 10E-15
Don't type 3.9*10^-7 because this can get you into trouble with order of operations. Instead, type 3.9E-7
Don't type 3.9*10E-7 because the "E" already means "times ten to the". Just type 3.9E-7
If the screen just reads 0 or 0.000000003, try pressing 2^{nd} SCI or putting the calculator into SCI mode.

3. $x = 6.31\times10^{-4}$

4. x = 0.04076

5. x = 1.521

6. x = 0.03589 and -0.83589

7. x = 0.05841

8. x = 54.054