Name_____

ALGEBRA II JOURNAL
Exponents and Roots

1. When working with expressions with exponents, you _____ change the base.
2. Variables or numbers with negative exponents $\left(x^{-3} \text{ or } 2^{-1}\right)$ should be moved _____ _____ while variables or numbers in the denominator of a fraction with negative exponents $\left(\frac{3}{y^{-5}} \text{ or } \frac{1}{6^{-2}}\right)$ should be moved to _____.
3. When working with a fraction raised to a negative power $\left(\frac{2}{y^2}\right)^{-3}$, the easiest way to deal with the negative power is _____.
4. Numbers expressed in <u>scientific notation</u> should have a negative exponent if the number is ___ _____ and a positive exponent if the number is _____.
5. When dividing numbers in scientific notation, all terms must be moved _____ _____.
6. (a) If the Even-Even-Odd rule for simplifying radicals is true, you should add an _____ to an exterior variable which has an even _____, an even _____, and an odd _____.

   (b) Fill in numbers for the exponents in the problem below so that *x* would NOT need an absolute value, but *y* would need an absolute value in the final solution.

   $$\sqrt{x^{\square}y^{\square}} \cdot \sqrt{x^{\square}y^{\square}}$$

7. To graph a square root or cube root, the T-table for x^2 or x^3 is altered by _____ _____.
8. (a) An exponent written as a fraction is called a _____ exponent.

   (b) The expression $b^{\frac{x}{y}}$ can also be written as _____.
9. Before you can multiply two radicals with different indices $\left(\sqrt[3]{x} \cdot \sqrt[5]{x}\right)$ together, you must _____ _____.
10. An expression with one radical inside another radical $\left(\sqrt{\sqrt[3]{x}}\right)$ can be simplified by _____ _____.
11. When solving an equation containing **TWO** square roots:

    (a) The first step is to _____.

    (b) In the second step you must square an expression such as $\left(\sqrt{x+3}-2\right)^2$ by _____.

    (c) The last step of the problem is _____.

12. (a) An expression is in quadratic form if _____

_____.

(b) If an equation is in quadratic form, you should try to solve it by _____ using the exponent on the _____ term.

13. Power regression can be used to fit a curve to data which is shaped like vertical or horizontal _____ and _____.

14. List the following rules, facts, or formulas.
    a) List the six rules of exponents

    b) Sketch the graph of each of the following: $y = x^2$, $y = x^3$, $y = \sqrt{x}$, $y = \sqrt[3]{x}$. ***Show the standard T-table for each.***