Fractional Exponents-Discovery   **Name:**

We know that $4^2 = 4 \cdot 4$ which equals 16. We also know that $4^{-2} = \dfrac{1}{4^2}$ which equals $\dfrac{1}{16}$

So what do you think $4^{\frac{1}{2}}$ equals?

Grab your graphing calculator and find out!
  <u>Type</u>: 4 ^ (1 / 2) enter. (**Note**: You have to put the fractional exponent in parentheses to tell the calculator that the whole fraction is the exponent.) What do you get?_____

<u>Let's try some others</u>. Put each expression below into your calculator and find what it is equal to.
Note: Don't forget to put the exponent in parentheses!!!

$9^{\frac{1}{2}} =$ $25^{\frac{1}{2}} =$ $100^{\frac{1}{2}} =$

$16^{\frac{1}{2}} =$ $49^{\frac{1}{2}} =$ $64^{\frac{1}{2}} =$

Look at your results above. What is another way to write $4^{\frac{1}{2}}$?_____

Finish this sentence: *Fractional exponents are another way of writing a* _____.

Let's use the calculator to find these values.

$8^{\frac{1}{3}} =$ $64^{\frac{1}{3}} =$ $27^{\frac{1}{3}} =$

$16^{\frac{1}{4}} =$ $81^{\frac{1}{4}} =$ $32^{\frac{1}{5}} =$

Look at your results above. What is another way to write $8^{\frac{1}{3}}$? _____

Let's use the calculator to find these values.

$8^{\frac{2}{3}} =$ $64^{\frac{2}{3}} =$ $32^{\frac{3}{5}} =$

What is another way to write $8^{\frac{2}{3}}$? _____