Radicals

What does a radical sign look like?

Here are some examples: $\sqrt{}$, $\sqrt[3]{}$, $\sqrt[4]{}$, $\sqrt[5]{}$

Square root: $\sqrt{49}$ $\sqrt{\frac{1}{81}}$ $\sqrt{-16}$

Cube root: $\sqrt[3]{8}$ $\sqrt[3]{-27}$ $\sqrt[3]{\frac{1}{64}}$

Fourth root: $\sqrt[4]{16}$ $\sqrt[4]{(-2)^4}$ $\sqrt[4]{-16}$

Fifth root: $\sqrt[5]{32}$ $\sqrt[5]{-32}$ $\sqrt[5]{(-3)^5}$

Even root of a negative number is NOT real.	**Odd** root of a negative number is a negative number.

Convert rational exponents to radicals:

$8^{4/9}$ $(5x^2y)^{2/5}$

Convert radicals to exponents. Simplify where possible.

$\sqrt{49}$ $\sqrt[3]{8}$ $\sqrt[5]{32}$

$\sqrt[4]{7^3}$ $\left(\sqrt[3]{x}\right)^5$

$\sqrt[5]{p^{20}}$ $\sqrt[3]{(5x^2y^2)^{12}}$