

## Algebra II

### Section 7.4 - Rational Exponents

**Obj:** To simplify expressions with rational exponents  
(fraction exponents)

$\bullet \quad a^{-m} =$	$a^{-2} =$
$\bullet \quad \frac{1}{a^{-m}} =$	$\frac{1}{a^{-3}} =$
$\bullet \quad a^m \cdot a^n = a^{m+n}$	$a^4 \cdot a^5 =$
$\bullet \quad (a^m)^n = a^{mn}$	$(a^4)^2 =$
$\bullet \quad \frac{a^m}{a^n} = a^{m-n}$	$\frac{a^7}{a^4} =$

If m and n are positive integers, then

$\bullet \quad a^{\frac{1}{n}} = \sqrt[n]{a}$  $(n^{th} \text{ root of } 'a')$	$a^{\frac{1}{3}} =$
$\bullet \quad a^{\frac{m}{n}} = (\sqrt[n]{a})^m \quad \text{or} \quad \sqrt[n]{a^m}$  <b>(denominator gives the root)</b>	$a^{\frac{3}{4}} =$