Precalculus
Lesson 1.2 – Exponents and Radicals
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The key points of this section are to review rules of exponents.

- Definition of a radical: $If \quad \sqrt{a} = b, \quad then \quad a = b^2; \quad for\ b \geq 0. \quad \therefore \quad \sqrt[n]{a} = b, \quad then\ a = b^n.$
- No radicals in the denominator. The denominator must be multiplied by a value such that the radical may be simplified. Remember! When dealing with a fraction, the value of the fraction must not be changed. You can only multiply by 1. If the denominator has a square root, then multiply by 1 such that the square root in the denominator becomes a perfect square and may be simplified.
  EXAMPLES:

$\frac{1}{\sqrt{2}} \cdot \frac{\sqrt{2}}{\sqrt{2}} = \frac{\sqrt{2}}{\sqrt{4}} = \frac{\sqrt{2}}{2}$	$\frac{3}{\sqrt{18}} =$	$\frac{a}{\sqrt{b}} =$
$\frac{3}{\sqrt{5}} =$	$\frac{2}{\sqrt[3]{3}} =$	

- Anything raised to the power of zero is equal to 1: $a^0 = 1$
- Negative exponents may be simplified by taking the reciprocal and changing the exponent to positive:

$$a^{-n} = \frac{1}{a^n}; \qquad remember: \ opposite\ side, opposite\ sign$$

- Laws of Exponents found on page 14 must be reviewed and understood
- Scientific Notation found on page 16 must also be reviewed and understood