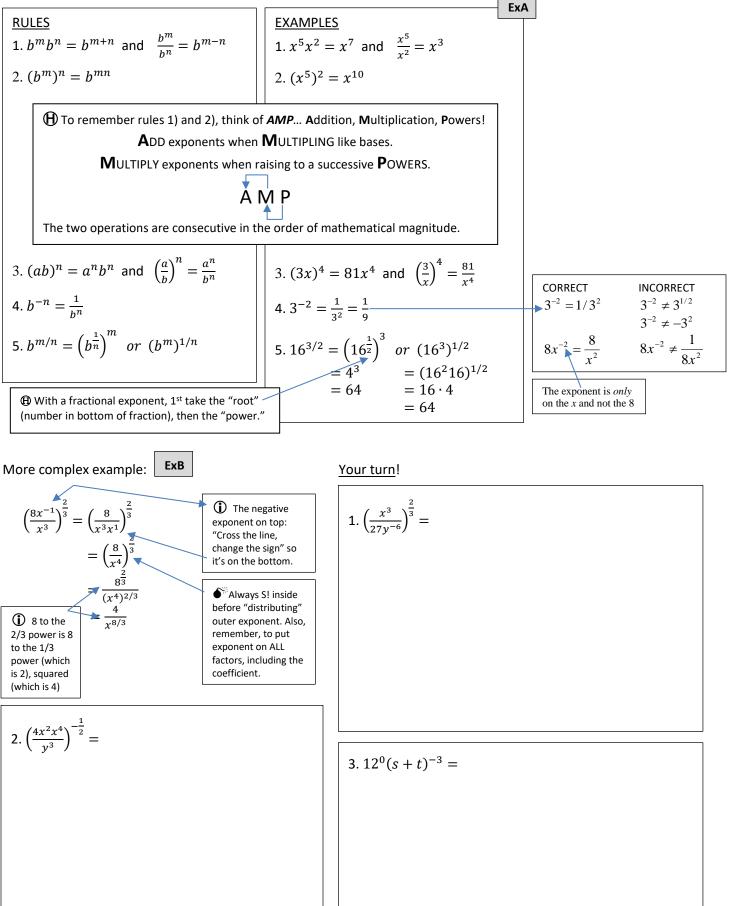
Prerequisite Tutorial 1 Exponents and Radicals

① Laws of Exponents



① Laws of Radicals

RULES
1.
$$\sqrt[n]{ab} = \sqrt[n]{a}\sqrt[n]{b}$$
 and $\sqrt[n]{a}b = \frac{\sqrt[n]{a}}{\sqrt[n]{b}}$
2. $\sqrt[n]{b^m} = b^{\frac{m}{n}}$ **EXAMPLES**
1. $\sqrt[3]{2x} \cdot \sqrt[3]{4x^5} = \sqrt[3]{8x^6}$ and $\frac{\sqrt[3]{32x^4}}{\sqrt[3]{4}} = \sqrt[3]{\frac{32x^4}{4}}$
 $= 2x^2$
 $= \sqrt[3]{8x^3x}$
 $= 2x\sqrt[3]{x}$
 $=$

ExD Rationalizing numerators and denominators:

1.
$$\frac{5x^2}{\sqrt{3x}}$$

 $=\frac{5x^2}{\sqrt{3x}}, \frac{\sqrt{3x}}{\sqrt{3x}}$
 $=\frac{5x^2\sqrt{3x}}{3x}$
 $=\frac{5x^2\sqrt{3x}}{3x}$
 $=\frac{5x^2\sqrt{3x}}{3x}$
 $=\frac{5x\sqrt{3x}}{3x}$
 $=\frac{5x\sqrt{3x}}{3}$
Your turn!
4. Simplify $\frac{2\sqrt{x^5y^6}}{\sqrt{16xy^3}}$
 $=\frac{5x^2\sqrt{3x}}{\sqrt{3x}}$
 $=\frac{5x\sqrt{3x}}{3}$
 $=\frac{5x\sqrt{3x}}{3}$
 $=\frac{5x\sqrt{3x}}{3}$
 $=\frac{5x\sqrt{3x}}{3}$
 $=\frac{5x\sqrt{3x}}{3}$
 $=\frac{5x\sqrt{3x}}{3}$
 $=\frac{1}{\sqrt{x+3+\sqrt{x}}}$
5. Rationalize the denominator: $\frac{2\sqrt{x}+\sqrt{y}}{2\sqrt{x}-\sqrt{y}}$

Prerequisite Review problems

FYI: You will be required to show your work in the same manner as shown in the previous examples. Be sure to read the HW Guidelines *carefully* before you begin the PR's.

PT1#1 Simplify. Answers should contain no negative exponents.
(a)
$$8(-8)^{\frac{2}{3}}$$
 (b) $-32^{\frac{2}{5}}$ (c) $\left(\frac{2x^4y^{-2}}{x^2y^3}\right)^{-3}$ (d) $x\sqrt{16x^3} + \sqrt{x^5}$ (e) $\sqrt[3]{2a^2b} \cdot \sqrt[3]{32a^4b^2}$
***PT1#2** (a) Rationalize the numerator of $\frac{\sqrt{x}-\sqrt{y}}{\sqrt{x}+\sqrt{y}}$ (b) Rationalize the denominator of $\frac{2}{\sqrt{x+2}+\sqrt{x}}$

