

Simplify using properties of exponents

## Example 2

F]  $(8x)^{1/3}$

E]  $\left(\frac{x}{64}\right)^{2/3}$

D]  $(x^{5/6})^{-3}$

G]  $(x^{3/2})^{1/2}$

B]  $\frac{x^{2/3}}{x^{5/3}}$

A]  $x^{1/3} \cdot x^{4/3}$

## Simplifying Expressions with Rational Exponents

An expression with rational exponents is simplified when...

Simplify using properties of exponents

## Example 1

A]  $5^{1/4} \cdot 3^{1/4}$

B]  $(4^{2/3} \cdot 5^{3/4})^3$

E]  $\left(\frac{64}{54}\right)^{1/3}$

D]  $(3^{3/2})^2$

F]  $(6^{2/3})^{3/4}$

G]  $\frac{4^{2/3}}{4^{1/3}}$

Property of Exponents		Example
Product of Powers	$a^m a^n =$	$3^{1/2} \cdot 3^{3/2} =$
Quotient of Powers	$\frac{a^m}{a^n} =$	$\frac{6^{5/2}}{6^{1/2}} =$
Power of a Power	$(a^m)^n =$	$(4^{3/2})^2 =$
Power of a Product	$(ab)^n =$	$(4 \cdot 9)^{1/2} =$
Power of a Quotient	$\left(\frac{a}{b}\right)^n =$	$\left(\frac{8}{27}\right)^{1/3} =$
Negative Exponent	$a^{-n} =$	$25^{-1/2} =$