

# Simplifying Exponential Expressions

An exponential expression is completely simplified if ...

1. No negative exponents.
2. Same base does NOT appear more than once in a product or quotient.
3. No powers are raised to powers
4. No products are raised to powers
5. No quotients are raised to powers
6. Numerical coefficients in a quotient do NOT have any common factor other than 1.

## Examples

①  $\frac{b}{a}$     ②  $z^{12}$     ③  $\frac{s^5}{t^5}$   
④  $x^3$     ⑤  $a^4 b^4$     ⑥  $\frac{5a^2}{2b}$

## Nonexamples

①  $a^{-2}ba$     ④  $(ab)^4$   
②  $x \cdot x^2$     ⑤  $\left(\frac{s}{t}\right)^5$   
③  $(z^3)^4$     ⑥  $\frac{10a^2}{4b}$