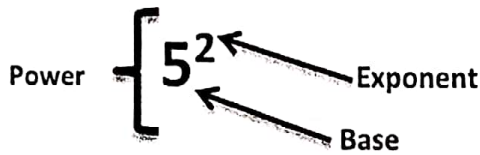


# 1.3 Rules of Exponents

**N.RN.1** I CAN... rewrite expressions involving rational exponents using the properties of exponents.

## vocabulary:

**Monomial** A number, a variable, or a product of a number and one or more variables  
 Examples:  $34xy$ ,  $7a^2b$



## rules of exponents:

<b>Product of Powers:</b> $a^m \cdot a^n = a^{m+n}$ If multiplying two numbers with the same base, ADD the exponents		
$5^2 \cdot 5^6 = 5^{2+6} = 5^8$	$y^4 \cdot y^3 \cdot y^1 = y^{4+3+1} = y^8$	
$(7y^5)(6y) = 7 \cdot 6 y^5 y^1 = 42y^6$	$(-3x^2y^7)(5xy^6) = -3 \cdot 5 x^2 x \cdot y^7 \cdot y^6 = -15x^3y^{13}$	
<b>Quotient of Powers:</b> $\frac{a^m}{a^n} = a^{m-n}$ If dividing two numbers with the same base, SUBTRACT the exponents		
$\frac{y^6}{y} = y^{6-1} = y^5$  $y \cdot y \cdot y \cdot y \cdot y$	$\frac{6^{13}}{6^2} = 6^{13-2} = 6^{11}$	$\frac{2a^7b^3}{3a^5b^3} = \frac{2a^2}{3} \quad b^0 = 1$