

6.1: Exponent Notes
 “I WILL ...
 Identify Exponents.”

I. Properties of Exponents

- A. Product of a Power: $a^m \cdot a^n = a^{m+n}$
- B. Power of a Power: $(a^m)^n = a^{m \cdot n}$
- C. Power of a Product: $(ab)^m = a^m b^m$
- D. Negative Power Property: $(a)^{-n} = \frac{1}{a^n}$
- E. Quotient Power Property: $\frac{a^m}{a^n} = a^{m-n}$
- F. Zero Power Property: $a^0 = 1$
- G. Identity Property: $a^1 = a$

II. Model Problems

Ex 1: Solve $2^4 \cdot 2^5$		Ex 2: Simplify $5^x \cdot 5^n$	
Ex 3: Solve $16^{3/4} \cdot 16^{1/4}$ and leave in exponential form		Your Turn: Simplify $x \cdot x^{6/4}$ and leave in exponential form	
Ex 4: Solve $(2^3)^4$	Ex 5: Solve $((1/2)^2)^3$	Your Turn: Simplify $[(-2)^5]^3$	
Ex 6: Simplify $(3x)^4$		Ex 7: Simplify $(3x^2)^4$	
Ex 8: Simplify $(8x^{3/4})^{2/3}$ and leave in exponential form		Your Turn: Simplify $\left(\frac{1}{3}xy^3\right)^2$	

<p>Ex 9: Simplify $x^{1/2}(x^{3/4} - x^{3/2})$ and leave in exponential form</p>	<p>Your Turn: Simplify $(16x^{2/5}y^4)^{5/4}$ and leave in exponential form</p>
<p>Ex 10: Simplify $(x)^{-3}$</p>	<p>Ex 11: Simplify $(xy^{7/4})^{-2}$ and leave in exponential form</p>
<p>Ex 12: Simplify $(25/36)^{-1/2}$ and leave in exponential form</p>	<p>Ex 13: Simplify $\frac{x^8}{x^3}$</p>
<p>Ex 16: Simplify $\frac{-5x^2y^4}{10x^3y^2}$</p>	<p>Your Turn: Simplify $\frac{4^{5/2}x^8y^3}{4^{1/2}x^{11}y^7}$</p>
<p>Ex 17: Simplify $\frac{2x^3}{x^3}$</p>	<p>Your Turn: Solve -3^0</p>