Multiplying with Exponents Name: _____
Day 6 Unit 1 Principles Pd: _____ Date: _____

OBJECTIVE: To simplify algebraic expressions using exponent rules.

The table below shows exponential expressions. Expand each expression out, then simply each expression.

Expression	**Expression written as repeated Multiplication**	**Simplified Expression**
$2^3 \cdot 2^4$		
$m^2 \cdot m^3$		
$a \cdot a^6$		
$m^2 n \cdot m^3 n^2$		
$3a \cdot 4a^3$		
$5xy^3 \cdot 3x^4 y$		
$2b^2 \cdot 7bc \cdot 3c^3$		
$(7r)^3$		
$(y^6)^5$		
$(5x^2)^3$		
$8(qr)^3 r$		
$(3a^3 b^2)^2$		

Generalize your findings by making a conjecture about how to multiply with exponents in any situation.

Simplify. Show all work!

1. $9^6 \cdot 9^2$

2. $x^9 \cdot x^3$

3. $3a^4 \cdot 2a^5$

4. $m^6 n^2 \cdot 2mn^7$

5. $-3ab^2 \cdot 4a^2 b^8$

6. $4h^3 \cdot 5h^4 \cdot h^2$

7. $x^5 \cdot 3y^3 \cdot 2xy^2$

8. $6m^4 \cdot 2m^2 n^5$

9. $-2ab \cdot 4a^6 \cdot 2b^3$

10. $\left(-5w^8\right)\left(-9w^8\right)$

11. $\left(4x^3 y^5\right)^4$

12. $3\left(xy\right)^4 x$

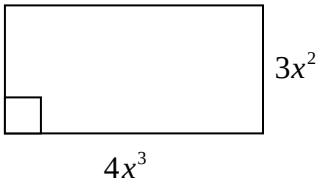
13. $\left(-4w^3 y^2 z\right)^4$

14. $\left(2a^3\right)^3 4ab^2$

15. $\left(\dfrac{2x}{3y^2}\right)^3$

Find the area of each figure below.

16. *Area = length • width*



17. *Area = base • height*