Name _____ per. _____

Worksheet 1-3

Simplify the product of powers. **SHOW YOUR WORK FOR AT LEAST 2 OF THEM…**

1. When multiplying exponents with the same base, you keep the base and _____ the exponents.

2. $2^3 \bullet 2^4 =$

3. $5^6 \bullet 5 =$

4. $x^4 \bullet x^7 =$

5. $(4^2 \bullet 2^5)(4^6 \bullet 2^3) =$

6. $(x^3 \bullet y)(x^7 \bullet y^4) =$

Simplify the quotient of powers. **SHOW YOUR WORK FOR AT LEAST 2 OF THEM…**

7. When dividing exponents with the same base, you keep the base and _____ the exponents.

8. $\frac{x^{11}}{x^2} =$

9. $\frac{7^9}{7^6} =$

10. $\frac{a^6}{a^3} =$

11. $\frac{9^9 \bullet 7^3}{9^4 \bullet 7^2} =$

12. $\frac{x^6 \bullet y^{10}}{x \bullet y^5} =$

Fill in the blank box to make the statement true.

13. $y^{\square} \cdot y^9 = y^{12}$

14. $\frac{7}{7^{\square}} = 7^2$

Fill in the table below for the **product** of powers.

Expression	Expanded Form	Simplified Form
$x^{\square} \cdot x^{\square}$	x • x •x • x • x •x • x • x • x • x	
$(2^3 \cdot 4^2)(2^2 \cdot 4^3) =$		
		2^9

Fill in the table below for the **quotient** of powers.

Expression	Expanded Form	Simplified Form
$\frac{4^5}{4^2}$		
	$\frac{7 \cdot 7 \cdot 7 \cdot 2 \cdot 2 \cdot 7 \cdot 7 \cdot 2 \cdot 2}{7 \cdot 7 \cdot 2 \cdot 7 \cdot 2}$	
	_____	$(x^3 \cdot y)$