Name _____ Date _____ Period _____

16.1 – Laws of Exponents I

Evaluate the following.

1. $(-3^3)^2 =$	2. $4 \cdot 4^2 =$
3. $(2^3 \cdot 2^2)^4 =$	4. $2 \cdot (2^4)^3 =$

Simplify the following.

5. $(x^3)^4 =$	6. $2x \cdot x^3 =$
7. $(3x^2)(2x^3) =$	8. $(4x^3y^2)^2 =$
9. $(x^4)^3 =$	10. $x^3 \cdot -4x^4 =$
11. $(2xy^4z^2)^6 =$	12. $3x^2(3xy^3)^2 =$

13. $(5x)^0 =$	14. $4x^3 \cdot 4xy^0 =$
15. $(x^4)(x^{k-4}) =$	16. $(4x^3y^2z)^3(-4x^5y^4z^3) =$

Use the laws of exponents to solve the following equations.

17. $3^x \cdot 3^4 = 3^9$	18. $(4^x)^2 = 4^{10}$
19. $5^{3x+3} \cdot 5^{-2x} = 5^{-3x-1}$	20. $(7^{4x-2})^3 = 7^6$

21. What is the area of this square with sides of $4x^3y^2$?

$A = s^2$