ALGEBRA 2B
6.1 Practice

NAME Key
PERIOD _____

Use Properties of Exponents to Evaluate the Expression.

1. $3^4 \cdot 3^5 = 3^9 =$ 19683

2. $4^{-1} \cdot 4^4$ $4^3 =$ 64

3. $6^{-2} \cdot 6^{-1}$ $6^{-3} = \frac{1}{6^3} =$ $\frac{1}{216}$

4. $(-3)^2(-3)^3$ $(-3)^5 =$ -243

5. $\frac{5^4}{5^2}$ $5^2 = 25$

6. $\frac{(-2)^8}{(-2)^3}$ $(-2)^5 =$ -32

7. $(2^4)^2$ $2^8 =$ 256

8. $\left(\frac{3}{2}\right)^3 = \frac{3^3}{2^3} =$ $\frac{27}{8}$

9. $13^0 =$ 1

10. $4^{-3} = \frac{1}{4^3} =$ $\frac{1}{64}$

Simplify the expression.

11. $x^3 \cdot x^5 =$ x^8

12. $(3x)^3 =$ $27x^3$

13. $\frac{x^3}{x^9} =$ $\frac{1}{x^6}$

14. **The radius of Jupiter is approximately 44,366 miles. Find the surface area of Jupiter. Use the formula $S = 4\pi r^2$.**

$S = 4\pi(44366)^2$

$S = 2.47 \times 10^{10}$ sq. miles

$= 24{,}700{,}000{,}000$ Sq. miles.