Name _____ Date _____

LESSON 7.1

Practice A

For use with the lesson "Apply Exponent Properties Involving Products"

Name the property that is demonstrated by the example.

1. $(2x)^3 = 2^3 \cdot x^3 = 8x^3$

2. $x^4 \cdot x^5 = x^{4+5} = x^9$

3. $(y^3)^2 = y^{3 \cdot 2} = y^6$

Fill in the blanks.

4. $(z^3)^5 = z^{3\square 5}$
$= z^{\square}$

5. $(5x)^4 = 5^{\square} \cdot x^{\square}$
$= \square x^{\square}$

6. $3^3 \cdot 3^1 = 3^{3\square 1}$
$= 3^{\square}$

7. $(-4y^2)^3 = (-4)^{\square}(y^{\square})^{\square}$
$= \square y^{\square}$

8. $(x^2y^4)^3 = (x^{\square})^{\square}(y^{\square})^{\square}$
$= x^{\square}y^{\square}$

9. $x^2(x^3y)^2 = x^{\square}(x^{\square})^{\square}y^{\square}$
$= x^{\square}x^{\square}y^{\square}$
$= x^{\square}y^{\square}$

Simplify the expression. Write your answer using exponents.

10. $8^2 \cdot 8^5$

11. $5^2 \cdot 5^4$

12. $7 \cdot 7^8$

13. $(2^4)^5$

14. $(6^3)^7$

15. $(4^2)^9$

16. $(13 \cdot 18)^2$

17. $(21 \cdot 25)^5$

18. $(7 \cdot 154)^6$

Simplify the expression.

19. $x^3 \cdot x$

20. $y^2 \cdot y^6$

21. $z^{10} \cdot z^3$

22. $(m^4)^7$

23. $(b^9)^2$

24. $(p^5)^3$

25. $(3n)^3$

26. $(2x)^5$

27. $(xy)^6$

28. **State Populations** The table below shows the populations of selected states in 1870. Write the order of magnitude of each of the populations.

State	Wisconsin	Nebraska	New Jersey	Oregon
Population	1,054,670	122,993	906,096	90,923

29. **U.S. National Parks** Hot Springs National Park in Arkansas covers an area of about 10^1 square miles. Kenai Fjords National Park in Arkansas covers an area that is about 10^2 times the area of Hot Springs National Park. Find the approximate area of Kenai Fjords National Park. Write your answer using exponents.

30. **Mining** In 2000, Canada mined approximately 10^4 metric tons of uranium. The amount of metric tons of zinc mined in Canada in 2000 was approximately 10^2 times this amount. About how many metric tons of zinc were mined in Canada in 2000?