LESSON 4.5

Name _____ Date _____

Practice A

For use with pages 193–198

1. Describe and correct the error in simplifying $2x^3 \cdot 2x^6$.

$$2x^3 \cdot 2x^6 = 2x^{3+6}$$
$$= 2x^9$$

Find the product or quotient. Write your answer using exponents.

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

3. $2^3 \cdot 2^3$

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

5. $4 \cdot 4^8 \cdot 4^7$

6. $9^7 \cdot 9$

7. $8^5 \cdot 8^6$

8. $\frac{2^{14}}{2^9}$

9. $\frac{5^9}{5^8}$

10. $\frac{3^{15}}{3^6}$

11. $\frac{12^4}{12^3}$

12. $\frac{9^{13}}{9^7}$

13. $\frac{8^8}{8^6}$

Simplify.

14. $a^3 \cdot a^2$

15. $b^6 \cdot b^7$

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

17. $y^8 \cdot y^5$

18. $3g^4 \cdot g^5$

19. $4h^3 \cdot 5h^4 \cdot h^2$

20. $\frac{k^9}{k^7}$

21. $\frac{m^{14}}{m^3}$

22. $\frac{8n^{13}}{n^7}$

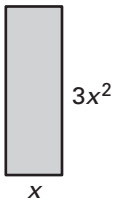
23. $\frac{32d^5}{8d^3}$

24. $\frac{18s^5 \cdot s^2}{15s^4}$

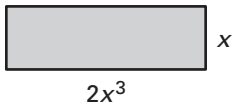
25. $\frac{16t^6 \cdot t^4}{12t^7}$

Find the area of the rectangle.

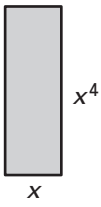
26.



27.



28.



29. There are about 10^{27} water molecules in 1 cubic foot of water. Lake Huron has a capacity of about 10^{14} cubic feet. About how many water molecules are in Lake Huron? Write your answer using an exponent.

Find the missing exponent.

30. $f^{11} \cdot f^6 = f^?$

31. $w^6 \cdot w^? = w^9$

32. $j^? \cdot j^9 = j^{13}$

33. $\frac{c^8}{c^5} = c^?$

34. $\frac{v^?}{v^4} = v^7$

35. $\frac{z^{12}}{z^?} = z^8$