LESSON 8.1

NAME _____ DATE _____

Practice A

For use with pages 450–455

Use the product of powers property to simplify the expression.

1. $2 \cdot 2$
2. $x \cdot x \cdot x$
3. $3^2 \cdot 3$
4. $n^3 \cdot n^2$
5. $m^2 \cdot m \cdot m^4$
6. $4^2 \cdot 4^5$
7. $y^6 \cdot y^3$
8. $t^3 \cdot t$
9. $2^2 \cdot 2 \cdot 2^2$

Use the power of a power property to simplify the expression.

10. $(2)^3$
11. $(-3)^3$
12. $(-1)^5$
13. $(2^2)^4$
14. $(3^4)^1$
15. $(-4^2)^2$
16. $(x^5)^2$
17. $(y^4)^3$
18. $(2x)^3$

Simplify, if possible. Write your answer as a power or as a product of powers.

19. $3^2 \cdot 3^4$
20. $(2^3)^5$
21. $x^5 \cdot x^3$
22. $(y^2)^8$
23. $(2x)^3$
24. $(-3x^4)^2$
25. $(x^2)^7$
26. $(-2x)^3(-x^2)$
27. $(xy)^3(z^6)^2$
28. $(-x^3)(-x)^2(-x)$
29. $(-y^3)(2y)^2$
30. $(5a^4) \cdot a^2$

... $x = -2$ and $y = 1$.

LESSON 8.1

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Practice B

For use with pages 450–455

Use the product of powers property to simplify the expression.

1. $4 \cdot 4 \cdot 4$
2. $n \cdot n \cdot n \cdot n$
3. $2^2 \cdot 2^3$
4. $x^2 \cdot x \cdot x^3$
5. $5^2 \cdot 5^4$
6. $c \cdot c \cdot c \cdot c^2$
7. $t^2 \cdot t^5 \cdot t$
8. $m^3 \cdot m \cdot m^4$
9. $x \cdot x^2 \cdot x^3 \cdot x^4$

Use the power of a power property to simplify the expression.

10. $(4)^2$
11. $(-5)^3$
12. $(6^2)^1$
13. $(3g)^3$
14. $(ab)^2$
15. $(ht^2)^3$
16. $(x^5)^6$
17. $(y^3)^7$
18. $(x^6y^3)^3$

Simplify, if possible. Write your answer as a power or as a product of powers.

19. $4^2 \cdot 4^3$
20. $(9^2)^5$
21. $(-4a)^2$
22. $[(-6)^2]^3$
23. $[(-6x^2y)^3]^7$
24. $[(3x - 2)^3]^3$
25. $(5x)^4 \cdot (-4x)^3$
26. $(8ab)^2 \cdot 4a^9$
27. $\left(\frac{1}{4}x^4\right)^2$
28. $(a^2bc^3)^4 \cdot (b^2c)^3$
29. $(-x)^3(-x)^5(-x)^8$
30. $(-2x^2y)(x^3y^2)^3$

Simplify. Then evaluate the expression when $x = 2$ and $y = 2$.

31. $y^2 \cdot y^4$
32. $(x^2)^2$
33. $(-x^3) \cdot x^2$
34. $(x \cdot y^3)^3$
35. $-(x^3y)^2$
36. $(y^4 \cdot y) \cdot (x)^4$

LESSON 8.1

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Practice C

For use with pages 450–455

Use the product of powers property to simplify the expression.

1. $x \cdot x \cdot x \cdot x \cdot x$
2. $3^3 \cdot 3^2$
3. $y^7 \cdot y \cdot y^2$
4. $z^9 \cdot z^3 \cdot z^5$
5. $6^4 \cdot 6^6 \cdot 6^1$
6. $t^3 \cdot t^3 \cdot t^3$

Use the power of a power property to simplify the expression.

7. $(4x)^2$
8. $(5x^2)^2$
9. $(2t^2)^3$
10. $(m^2 \cdot n^5)^2$
11. $(-2w^3)^4$
12. $(-3y^2)^3$

Simplify, if possible. Write your answer as a power or as a product of powers.

13. $(2)^3(2)^5$
14. $(8^3)^2$
15. $(-2x^2y^3)^2$
16. $(-3a^2c) \cdot (3b^3c^7)^4$
17. $\left(\frac{1}{2}x\right)^3$
18. $\left(-\frac{1}{3}x^4\right)^2$
19. $(3x^3)^4\left(\frac{1}{4}x^3\right)^2$
20. $(4y)^2(-3y^2)^3$
21. $[(9x + 15)^3]^6$
22. $[(-2x^4)^3(-x^8)]^2$
23. $-(a^7b^2) \cdot (a^4b^9)^3$
24. $(r^3s^7t^5)^3(s^2t)^5$

Simplify. Then evaluate the expression when $x = 2$ and $y = 1$.

25. $(x^4y^2)(y^5)$
26. $(-2xy)^3$
27. $\left(-\frac{2}{3}x\right)^2\left(\frac{3}{2}y\right)^3$
28. $(xy^2)^2(5y^3)$
29. $(2y)^4(3y^2)^2$
30. $(-3x)^3(4y^3)^2$

31. *Quarters* Someone offers to double the amount of money you have every day for 20 days. You have 1 quarter. On the first day, you will have 2 quarters worth \$.50. On the second day, you will have 4 quarters worth \$1.00. How much money will you have on the 20th day?

Probability In Exercises 32–35, use the following information.

Part A of your history test has 15 multiple choice questions. Each question has 4 choices. Part B has 10 true/false questions.

32. How many ways are there to answer the 15 multiple choice questions?
33. How many ways are there to answer the 10 true/false questions?
34. How many ways are there to answer all 25 questions?
35. If you guess the answer to each question, what is the probability that you will get them all right?