Name: Date:

Multiplying Exponents Using Product of Powers Rule

Multiply the expressions using the Product of Powers Rule. Simplify your final answer.

A. Same Base (Product of Powers Rule)

1. $x^2 \cdot x^3 =$ _____

2. $a^4 \cdot a^2 =$ _____

3. $y^5 \cdot y^1 =$ _____

4. $b^3 \cdot b^4 =$ _____

B. Zero Exponents (Special Cases)

5. $p^0 \cdot p^6 =$ _____

6. $t^4 \cdot t^0 =$ _____

7. $s^1 \cdot s^0 \cdot s^5 =$ _____

8. $x^0 \cdot x^3 \cdot x^2 =$ _____

C. Grouped Expressions with Parentheses

9. $(x^2 \cdot x^3) \cdot x^2 =$ _____

10. $(a^4 \cdot a) \cdot a^2 =$ _____

11. $(m^3 \cdot m^2) \cdot m =$ _____

12. $(z^1 \cdot z^2) \cdot z^4 =$ _____

13. $(p^5 \cdot p^2) \cdot p^0 =$ _____

14. $b^3 \cdot b^0 \cdot b^5 =$ _____

15. $(d^4 \cdot d) \cdot d^2 =$ _____

16. $(k^3 \cdot k^2) \cdot k^0 =$ _____

Name: Answer Key Date:

Multiplying Exponents Using Product of Powers Rule

Multiply the expressions using the Product of Powers Rule. Simplify your final answer.

A. Same Base (Product of Powers Rule)

1. $x^2 \cdot x^3 =$ x^5

2. $a^4 \cdot a^2 =$ a^6

3. $y^5 \cdot y^1 =$ y^6

4. $b^3 \cdot b^4 =$ b^7

B. Zero Exponents (Special Cases)

5. $p^0 \cdot p^6 =$ p^6

6. $t^4 \cdot t^0 =$ t^4

7. $s^1 \cdot s^0 \cdot s^5 =$ s^6

8. $x^0 \cdot x^3 \cdot x^2 =$ x^5

C. Grouped Expressions with Parentheses

9. $(x^2 \cdot x^3) \cdot x^2 =$ x^7

10. $(a^4 \cdot a) \cdot a^2 =$ a^7

11. $(m^3 \cdot m^2) \cdot m =$ m^6

12. $(z^1 \cdot z^2) \cdot z^4 =$ z^7

13. $(p^5 \cdot p^2) \cdot p^0 =$ p^7

14. $b^3 \cdot b^0 \cdot b^5 =$ b^8

15. $(d^4 \cdot d) \cdot d^2 =$ d^7

16. $(k^3 \cdot k^2) \cdot k^0 =$ k^5