

Multiplying Exponentials

Product Rule: $A^m \times A^n = A^{m+n}$

When you multiply exponentials with the SAME base, you add the exponents

Example: Simplify $7^3 \times 7^8$ in exponential notation.

$$\begin{aligned} 7^3 \times 7^8 &= 7^{3+8}, \\ &= 7^{11}. \end{aligned}$$

Simplify the following expressions in exponential notation.

1. $6^7 \times 6^4$

2. $9 \times 9 \times 9 \times 9 \times 9$

3. $4^5 \times 4 \times 4^8$

4. $12^6 \times 12^9 \times 12^3 \times 12^2$

5. $2^2 \times 8$

6. $3^{79} \times 3^{11}$

7. $5^7 \times 5^2 \times 5^3$

8. $11^4 \times 11^4 \times 11^4 \times 11^4$

9. $49 \times 7^3 \times 7$

10. $8^{33} \times 8^5$

11. $5 \times 5^3 \times 125$

12. $10^8 \times 10^5 \times 10 \times 10^2$

13. $2^4 \times 5^2 \times 2^7 \times 5^3$

14. $7^3 \times 2^4 \times 7^5 \times 2^2$

15. $3^4 \times 5^4 \times 3^2 \times 5^3$

16. $4^3 \times 10^3 \times 4 \times 10^2$

N.B. If a number does not have an exponent, it's understood to be 1!