



## Raising a Power to a Power

**Power Rule:**  $(A^m)^n = A^{mn}$

**Example:**

**Simplify  $(9^4)^4$  in exponential notation.**

$$\begin{aligned}(9^4)^4 &= 9^{4 \times 4}, \\ &= 9^{16}.\end{aligned}$$

**Simplify the following expressions in exponential notation.**

1.  $(6^7)^2$

2.  $(12^0)^4$

3.  $(48^3)^5$

4.  $(2^6)^6$

5.  $(8^2)^3$

6.  $(3^{10})^8$

7.  $(25^2)^{13}$

8.  $(11^5)^9$

9.  $(8^4)^3$

10.  $(14^{15})^3$

11.  $(7^7)^4$

12.  $(10^8)^0$