

1.2 Exponents and Powers

EQ: How do we use repeated factors in math?

EX:

base \rightarrow 2 ⁶ Exponent/power

* The base tells us what to multiply

* The exponent tells us how many times to multiply the base.

EX: $2^6 = \underbrace{2 \cdot 2 \cdot 2 \cdot 2 \cdot 2 \cdot 2}_{\substack{\text{multiply the two} \\ \text{6 times}}}$

Example 1: 3^4

Expand: $3 \cdot 3 \cdot 3 \cdot 3$
 $\quad \quad \quad \vee \quad \quad \quad \vee$
 $\quad \quad \quad 9 \cdot 9$

Value = $\boxed{81}$

Example 2: 5^3

Expand: $5 \cdot 5 \cdot 5$
 $\quad \quad \quad \vee$
 $\quad \quad \quad 25 \cdot 5 = 125$

Value = $\boxed{125}$

Challenge!

Power of 1: $6^1 = 6, 5^1 = 5, 10^1 = 10$

Power of 0: $5^0 = 1, 8^0 = 1, 12^0 = 1$

Summary: