Summary of Power Rules of Exponents

Summary of Power Rules of Exponents

We have now defined exponents: x^m for all integers.

Summary of Power Rules of Exponents

We have now defined exponents: x^m for all integers.

Although, our definition varied depending on if m is positive, negative, or 0

Summary of Power Rules of Exponents

We have now defined exponents: x^m for all integers.

Although, our definition varied depending on if m is positive, negative, or 0

If $m > 0$ then $x^m = \underbrace{x \cdots x}_{m-times}$

Summary of Power Rules of Exponents

We have now defined exponents: x^m for all integers.

Although, our definition varied depending on if m is positive, negative, or 0

If $m > 0$ then $x^m = \underbrace{x \cdots x}_{m-times}$

If $m = 0$ then $x^m = 1$ but we need $x \neq 0$

Summary of Power Rules of Exponents

We have now defined exponents: x^m for all integers.

Although, our definition varied depending on if m is positive, negative, or 0

If $m > 0$ then $x^m = \underbrace{x \cdots x}_{m-times}$

If $m = 0$ then $x^m = 1$ but we need $x \neq 0$

The Power Rule we saw: $x^{-m} = \dfrac{1}{x^m}$ allows us to define exponents that are negative integers. Again here, we need $x \neq 0$

Summary of Power Rules of Exponents

We have now defined exponents: x^m for all integers.

Although, our definition varied depending on if m is positive, negative, or 0

If $m > 0$ then $x^m = \underbrace{x \cdots x}_{m-times}$

If $m = 0$ then $x^m = 1$ but we need $x \neq 0$

The Power Rule we saw: $x^{-m} = \dfrac{1}{x^m}$ allows us to define exponents that are negative integers. Again here, we need $x \neq 0$

We also learned two other Power Rules about exponents.

Summary of Power Rules of Exponents

We have now defined exponents: x^m for all integers.

Although, our definition varied depending on if m is positive, negative, or 0

If $m > 0$ then $x^m = \underbrace{x \cdots x}_{m-times}$

If $m = 0$ then $x^m = 1$ but we need $x \neq 0$

The Power Rule we saw: $x^{-m} = \dfrac{1}{x^m}$ allows us to define exponents that are negative integers. Again here, we need $x \neq 0$

We also learned two other Power Rules about exponents.

In General: For any numbers m and n:

Summary of Power Rules of Exponents

We have now defined exponents: x^m for all integers.

Although, our definition varied depending on if m is positive, negative, or 0

If $m > 0$ then $x^m = \underbrace{x \cdots x}_{m-times}$

If $m = 0$ then $x^m = 1$ but we need $x \neq 0$

The Power Rule we saw: $x^{-m} = \dfrac{1}{x^m}$ allows us to define exponents that are negative integers. Again here, we need $x \neq 0$

We also learned two other Power Rules about exponents.

In General: For any numbers m and n:

1. $\qquad\qquad x^m \cdot x^n = x^{(m+n)}$

Summary of Power Rules of Exponents

We have now defined exponents: x^m for all integers.

Although, our definition varied depending on if m is positive, negative, or 0

If $m > 0$ then $x^m = \underbrace{x \cdots x}_{m-times}$

If $m = 0$ then $x^m = 1$ but we need $x \neq 0$

The Power Rule we saw: $x^{-m} = \dfrac{1}{x^m}$ allows us to define exponents that are negative integers. Again here, we need $x \neq 0$

We also learned two other Power Rules about exponents.

In General: For any numbers m and n:

1. $\qquad\qquad x^m \cdot x^n = x^{(m+n)}$

2. $\qquad\qquad \dfrac{x^m}{x^n} = x^{(m-n)}$

Summary of Power Rules of Exponents

We have now defined exponents: x^m for all integers.

Although, our definition varied depending on if m is positive, negative, or 0

If $m > 0$ then $x^m = \underbrace{x \cdots x}_{m-times}$

If $m = 0$ then $x^m = 1$ but we need $x \neq 0$

The Power Rule we saw: $x^{-m} = \dfrac{1}{x^m}$ allows us to define exponents that are negative integers. Again here, we need $x \neq 0$

We also learned two other Power Rules about exponents.

In General: For any numbers m and n:

1. $$x^m \cdot x^n = x^{(m+n)}$$

2. $$\frac{x^m}{x^n} = x^{(m-n)}$$

3. $$x^{-m} = \frac{1}{x^m}$$