

TOPIC: EXPONENTIAL EXPRESSIONS

Exponential Expressions with Negative Bases

◆ Recall: Exponents are used to represent repeated multiplication. Ex. $2^4 = 2 \cdot 2 \cdot 2 \cdot 2 = 16$

► Negative numbers raised to an *even* power are _____ and negative numbers raised to an *odd* power are _____.

EXAMPLE

Find the value of each exponential expression by rewriting as a product.

(A) $(-2)^4$

(B) $(-3)^3$

(C) -5^2

◆ Note: $-a^n$ means ____ ($a \cdot a \cdot a \cdot \dots \cdot a$); it does NOT mean $-a \cdot -a \cdot -a \cdot \dots \cdot -a$.

PRACTICE

Evaluate the following expression.

(A) $(-4)^4$

(B) $(-11)^3$

(C) -2^2

EXAMPLE

Rewrite each product as an exponential expression and indicate whether the sign of the product would be negative or positive.

(A) $(-7) \cdot (-7) \cdot (-7) \cdot (-7) \cdot (-7)$

[POSITIVE | NEGATIVE]

(B) $(-10) \times (-10) \times (-10) \times (-10)$

[POSITIVE | NEGATIVE]