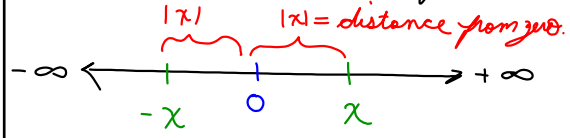
January 11, 2017

108

$$|x| = \begin{cases} x \text{ if } x \geq 0 \\ -x \text{ if } x < 0 \end{cases}$$

$|x|$ $|x|$ = distance from zero.



$$\frac{-2 \cdot |x|}{-2} = \frac{8}{-2}$$

$$|x| = -4 \ ?$$

Jan 11-9:49 AM

$$|x| = \begin{cases} x \text{ if } x \geq 0 \\ -x \text{ if } x < 0 \end{cases}$$

$x = 2$

$|2| = 2$

$2 = 2$ ✓

$x = -2$

$|-2| = -(-2)$

$|-2| = 2$

$2 = 2$ ✓

Jan 11-10:07 AM

Order of Operations

1.) Clear Grouping Symbols

( ), [ ], { }, $|x|$, $\sqrt[n]{x}$, $\frac{a}{b}$

2.) Evaluate Exponents

$5^3 = 125$

3.) Multiplication or Division which ever comes first working from left to right.

$(6 \div 3) \cdot 2 + 2$

$(2 \cdot 2) + 2$

$4 + 2$

6

4.) Addition or subtraction

Jan 11-9:58 AM

6.) $$\frac{6x^6}{x^2} = \frac{6}{1} \cdot \frac{x^6}{x^2} = 6x^4$$

$$\frac{x^6}{x^2} = \frac{x \cdot x \cdot x \cdot x \cdot x \cdot x}{x \cdot x}$$

$$x^{6-2=4} = x^4$$

Jan 11-10:29 AM

7.) $$\frac{(x^2)^4}{(3x)^3} = \frac{1 \cdot x^8}{27x^3} = \frac{x^5}{27}$$

Jan 11-10:33 AM

$(-2)^{(2)}$ even $= (-2) \cdot (-2) = 4$

$-2^{(2)}$ even $= (-1) \cdot 2^2$

$= (-1) \cdot 2 \cdot 2$

$= -2 \cdot 2$

$= -4$

Jan 11-10:36 AM

13) $3^{-2} = \frac{1}{3^2} = \frac{1}{9}$

Negative Exponent Rule

① $a^{-m} = \frac{1}{a^{+m}}$ (Base)

② $\frac{1}{a^{-m}} = \frac{a^{+m}}{1} = a^m$

Jan 11-10:39 AM

14) $\frac{x^4 (x^{-8})^{-9}}{(x^{-2})^{-3}} = \frac{x^4 \cdot x^{72}}{x^6}$

$= \frac{x^{4+72=76}}{x^6}$

$= x^{70}$

Jan 11-10:42 AM