



1.8 Exponents and Order of Op.

Need To Know



- Exponents
- Order of Operations
- Simplifying Expressions



Exponents

Exponents mean _____.

Notation: 4^3

Examples:

$$5^4$$

$$(-7)^2$$

$$(2x)^5$$

$$-3^2$$



Practice - Order of Operation

Simplify:

$$20 \div 5 + 15$$

$$8 \div 2 \cdot 4$$

$$12 \div (-3 - 5)$$

Order of Operations –Always work left to right

- 1.
- 2.
- 3.
- 4.



Practice - Order of Operation

Simplify:

$$-2(6 - 10) - 3|5 - 8|$$

Order of Operations –Always work left to right

1. Evaluate grouped expressions.
2. Evaluate exponents.
3. Evaluate multiplication and division in the order they appear.
4. Evaluate addition and subtraction in the order they appear.



Practice - Order of Operation

Simplify:

$$-2 \cdot 5^2 + 3 \cdot 2^3 \div (-1)^4$$

Order of Operations –

Always work left to right

1. Evaluate grouped expressions.
2. Evaluate exponents.
3. Evaluate multiplication and division in the order they appear.
4. Evaluate addition and subtraction in the order they appear.



Practice - Order of Operation

Simplify:

$$\frac{6(-2) + 5(-3)}{5(4) - 11}$$

Order of Operations –

Always work left to right

1. Evaluate grouped expressions.
2. Evaluate exponents.
3. Evaluate multiplication and division in the order they appear.
4. Evaluate addition and subtraction in the order they appear.



Simplifying Expressions

Recall: $-1(a) = -a$, and that
opposite and negative are synonymous

What is $-(a + b) =$

Examples:

$$-(7z + 6)$$

$$-(13y - 5x + 8)$$

$$-(-8x^3 + 4x^2 - 3x)$$



Simplifying Expressions

Examples:

$$7y - (2y + 9)$$

$$9t - 5r - 2(3r + 6t)$$

$$8n^2 + n - 7(n + 2n^2)$$

end