

Expressions, Equations, & Inequalities

I. Expressions: Revisit from the last unit

- Expressions can be *evaluated* or *simplified*, but they cannot be "*solved*"
- A mathematical phrase

EX ① Numerical expressions (#s only)

$$9 \div 3 + 2^2 - 1$$

$$\frac{12}{4} + 4(3)$$

$$7 + 9$$

EX ② Algebraic expressions

↓ (#s & variables)

$$3 + x + 2$$

$$5w - 3w$$

$$5x - 2 \quad \text{when } x=3$$

$$9m - 12$$

$$\text{when } m=4$$

NOTES

II. Equation

- a mathematical sentence that states two expressions are equivalent
- has an equal sign in between
- Equations can be *solved* and usually have one solution
- Like a balanced scale

Examples:

$$3 + x + 2 = 9$$

$$3 + 5 = 5x - 2$$

$$5w - 3w = 9 \div 3 + 2^2 - 1$$

$$\frac{12}{4} + 4(3) = 9m - 12$$

Expressions, Equations, & Inequalities

NOTES (continued)

NOTES available in pdf format on CMAPP: Days 23-24 Supplemental Resources

III. Inequalities

- a mathematical sentence that states one expression is greater than or less than another expression
- has inequality signs $>$, $<$, \geq , \leq
- Inequalities can be *solved* and have many solutions
- Like an unbalanced scale

Examples:

$$3 + 5 < 5x - 2$$

$$5w - 3w \geq 9 \div 3 + 2^2 - 1$$

$$3 + x + 2 < 9$$

$$\frac{12}{4} + 4(3) > 9m - 12$$

$$m \geq 2$$

$$m \leq 2$$

$$m \leq 2$$

$$m < 3$$

$$2x - 12 = 2.3$$

$$2x = 12 + 2.3$$

$$2x = 14.3$$

$$x = 7.15$$

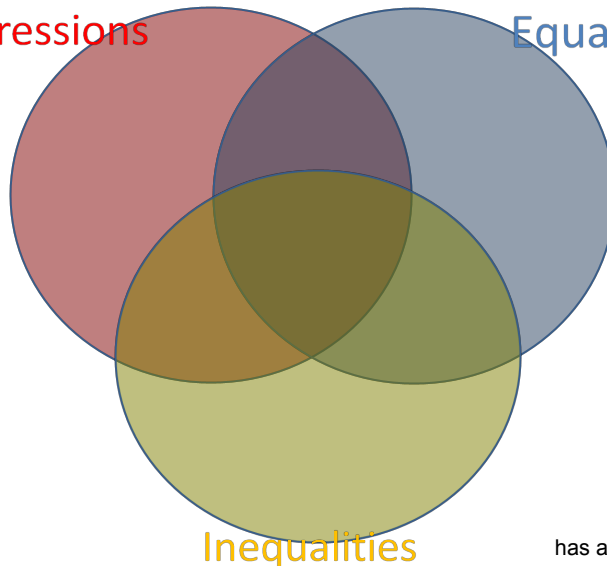
2, 0, 1, 0.1

Drag each characteristic to the appropriate spot in the Venn Diagram

Venn Diagram available in pdf format on CMAPP: Days 23-24 Supplemental Resources

Expressions

Equations



- has an equal sign
- a mathematical sentence
- usually has one solution
- has $>$, \leq , \geq or $<$ signs
- can be solved
- like an unbalanced scale
- can have variables
- has multiple solutions
- a mathematical phrase
- like a balanced scale
- like a scale
- can have numbers
- can be simplified
- has no solutions
- cannot be solved
- can have $+$, $-$, \times , \div signs

solution

