

Warm Up:

Evaluate.

1. $\frac{1}{4} + \frac{3}{8}$
2. $4.5 - 5.2$
3. $-14.5 - (-12.8)$
4. $-2 + \frac{2}{3}$
5. On Friday morning, Hanna had \$235 in her checking account. On Friday afternoon, she used her debit card to spend \$42, \$10 and \$35. What is the balance in Hanna’s account after these purchases?

1.2 Homework Questions?

Key Concept – Properties of Equality	
Reflexive Property	
Words:	
Symbols:	
Examples:	
Symmetric Property	
Words:	
Symbols:	
Examples:	
Transitive Property	
Words:	
Symbols:	
Examples:	

Speak Like A Mathematician:

additive identity:

multiplicative identity:

multiplicative inverses:

reciprocals:

Example 1: Identity Properties of Equality

Identify the property of equality used to justify each statement.

- If $13 + 25 = 38$, then $38 = 13 + 25$
- $y + 4 = y + 4$
- $22 + 7 = 22 + 7$
- If $36 = 17 + 19$, then $17 + 19 = 36$

Example 2: Interpret Properties of Equality

- If the amount of sugar in a recipe is equal to the amount of flour in the recipe plus 2 tablespoons, and the amount of flour plus 2 teaspoons is equal to the amount of milk, then the amount of sugar is equal to the amount of milk.

Write an algebraic expression for this scenario. Let a = the amount of sugar, b = the amount of flour plus 2 tablespoons, and c = the amount of milk.

Which property of equality makes this statement true?

Example 3: Use Properties of Equality

Use the given property to complete each statement.

- $y + 21 =$; Reflexive
- If $24 + 11 = 9 + 26$ and $9 + 26 = z$, then $24 + 11 =$; Transitive

Key Concept – Addition Properties	
Additive Identity Property	
Words:	
Symbols:	
Examples:	
Additive Inverse Property	
Words:	
Symbols:	
Examples:	

Key Concept – Multiplication Properties	
Multiplicative Identity	
Words:	
Symbols:	
Examples:	
Zero Property	
Words:	
Symbols:	
Examples:	
Multiplicative Inverse	
Words:	
Symbols:	
Examples:	

Example 4, 5, and 6: Evaluate Using Properties

Evaluate each expression.

- $4 - 2^2 + 8(2)$
- $\left(\frac{3}{2}\right)\left(\frac{2}{3}\right)(7)$
- $[4 - 3(2) + 7] * 0$

Key Concept – Associative and Commutative Properties	
Associative Property	
Words:	
Symbols:	
Examples:	
Commutative Property	
Words:	
Symbols:	
Examples:	

Example 7: Evaluate Using Associative and Commutative

Determine which property was used for each step.

$114 + 71 + 19 + 26$	$= 114 + (71 + 19) + 26$	
	$= 114 + 90 + 26$	Simplify.
	$= 114 + 26 + 90$	
	$= 140 + 90$	Simplify.
	$= 230$	Simplify.

Example 8 and 9: Evaluate Using Associative and Commutative Property

- $\frac{5}{6}(9)\left(\frac{6}{5}\right)$

- Josefina needs to evaluate $\frac{7}{3} * 2 * 3$. How can she use commutative property to make her evaluation easier?

- Jade buys groceries once each week, and she wants to calculate how much she spent on groceries over a 4-week period. Use one of the properties to evaluate the expression to find out how much she spent.

$$32 + 27 + 28 + 33$$

- Use the commutative and associative properties to evaluate $\frac{5}{9} * 9 * \frac{9}{5} * 4$.

Tonight's Homework: