Lesson 2

4 Arithmetic Operations
Variables represent unknowns

Operations Review

Terminology

addend + addend = sum

minuend − subtrahend = difference

factor × factor = product

dividend ÷ divisor = quotient

Times and Divide Symbols

Symbols for Multiplication and Division

"three times five"	$3 \times 5,\ 3 \cdot 5,\ 3(5),\ (3)(5)$
"six divided by two"	$6 \div 2,\ 2\overline{)6},\ \frac{6}{2}$

Inverse Operations

- + and -
- × and ÷
- They undo each other

Commutative Property

- **Addition:** Numbers can be added in any order
- $2 + 9 = 9 + 2$
- **Multiplication:** Numbers can be multipied in any order
- $2 \times 9 = 9 \times 2$

Identity Property

- **Addition:** $9+0=9$
- 0 is the **additive identity**
- **Multiplication:** $9\times 1=9$
- 1 is the **multiplicative identity**

Zero Property of Multiplication

- $5 \times 0 = 0$
- $a \times 0 = 0$

Associative Property

- Numbers can be grouped any way and the answer will be the same.
- $(2+3)+4=2+(3+4)$
- $(a+b)+c=a+(b+c)$
- $(2\times3)\times4=2\times(3\times4)$
- $(a\times b)\times c=a\times(b\times c)$

Review

Properties of Operations
Commutative Properties $a + b = b + a$ $a \times b = b \times a$
Associative Properties $(a + b) + c = a + (b + c)$ $(a \times b) \times c = a \times (b \times c)$
Identity Properties $a + 0 = a$ $a \times 1 = a$
Property of Zero for Multiplication $a \times 0 = 0$

Homework

- Written Practice
- Due Friday