

NAME _____

Module 1 **Number Sense**
Lesson 3 **Properties of Addition and Multiplication and Inverse Operations**

Lesson Objectives

- Identify properties of addition and multiplication: Commutative, Associative, Identity, and Multiplicative Property of Zero.
- Apply the properties of addition and multiplication to simplify computations with whole numbers and to solve problems using mental math.

Subtopic 1 Properties of Addition

The _____ Property of Addition states that when you add two numbers, the order does not change the result, $a + b = b + a$.

The _____ Property of Addition states that when you add numbers, the way that you group the numbers does not change the result, $(a + b) + c = a + (b + c)$.

The _____ Property of Addition states that the sum of any number and 0 equals that number, $n + 0 = n$

Name the property shown.

★ **1** $12 + 35 = 35 + 12$ _____

★ **2** $21 + (3 + 4) = (21 + 3) + 4$ _____

★ **3** $5 + (8 + 4) = (8 + 4) + 5$ _____

★ **4** $3 + 0 = 3$ _____

Methods of Calculation

- Pencil and paper
- Machine
- _____

Subtopic 2 Mental Math Using Properties of Addition

Mental math can be done using the right combinations of _____ and _____.

Simplify using mental math.

★ **5** $96 + 24 + 4$

Subtopic 3 Properties of Multiplication

The Commutative Property of Multiplication states that when you multiply two numbers, the order does not change the result, $a \times b =$ _____.

The _____ Property of Multiplication states that the way the factors are grouped does not change the product, $(a \times b) \times c =$ _____.

The _____ Property of Multiplication States that the product of 1 and any number is that number.

The Multiplicative Property of Zero states that the product of 0 and any number is ____.

Name the property shown.

★ **6** $12 \times 35 = 35 \times 12$ _____

★ **7** $6 \times 0 = 0$ _____

★ **8** $7 \times (6 \times 5) = (6 \times 5) \times 7$ _____

★ **9** $3 \times (2 \times 8) = (3 \times 2) \times 8$ _____

★ **10** $7 \times 1 = 7$ _____

Subtopic 4 Mental Math Using Properties of Multiplication

Simplify using mental math.

★ **11** 25×36