Lesson # 11

Properties of Arithmetic

Date

Warmup: Show each step on paper, then check your answer on the website.

1. $2 + 3 + 8 + 7 =$

2. $2 + 8 + 3 + 7 =$

Equivalent Expressions:

3. Multiply: $5 \times 3 \times 4 \times 2 =$

4. Multiply: $5 \times 2 \times 3 \times 4 =$

5. True or False: $10 \div 2 = 2 \div 10$

6. True or False: $7 - 3 = 3 - 7$

7. Calculate 5 + 0 =	8. Calculate $12 \cdot 1$ =
9. Calculate $8 \cdot 0$ =	10. y + _____ = y

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I. Commutative Property of Addition and Multiplication
II. Associative Property of Addition and Multiplication
III. Identity Properties of Addition and Multiplication
IV. Multiplicative Property of Zero
V. Mixed Review of Properties

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Pre-Algebra and Geometry I
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I. Commutative Property of Addition and Multiplication.

Commutative Property of Addition: the order in which numbers are added does not change their sum.

Commutative Property of Multiplication: the order in which numbers are multiplied does not change their product.

$3 + 6 = \_\_ + 3$

$\_\_ + 4 = 4 + b$

$7 \cdot 3 = \_\_ \cdot 7$

$\_\_ \cdot 8 = 8 \cdot b$

11. $2 + 4 = 4 + \_\_\_$

12. $\_\_\_ \cdot 6 = 6 \cdot 5$

13. $x + \_\_ = y + x$

14. $x \cdot y = y \cdot x$

II. Associative Property of Addition and Multiplication.

Associative Property of Addition: the grouping of the addends does not change their sum.

Associative Property of Multiplication: the grouping of the factors does not change their product.

$(2 + 4) + 6 = \_\_\_\_ + (4+ 6)$

$(3 \cdot 5) \cdot 2 = 3 \cdot (5 \cdot 2) =$

18. $(c+9)+15$

$(y \cdot 2) \cdot 3 = y \cdot (2 \cdot 3) =$

$(a + 5) +6 =$

16. $(5 + \_\_\_) + 2 = 5 + (8 + 2)$

17. $(6 \cdot 4) \cdot \_\_\_ = 6 \cdot (4 \cdot 5)$

III. Identity Properties of Addition and Multiplication.

Identity Property of Addition: The sum of an addend and zero is the addend.

Identity Property of Multiplication: The product of a factor and one is the factor.

5+0 =	__ + 9 = 9	4(1) =	(__)x = x	a + __ = a

IV. Multiplicative Property of Zero.

Multiplicative Property of Zero:
The product of a factor and zero is zero.

3(0) =

(_____)x = 0

a(__) = 0