REVIEW: Properties of Addition and Multiplication

Name _____

Key Concept and Vocabulary

Associative Properties:

$(a + b) + c = a + (b + c)$
$(a \cdot b) \cdot c = a \cdot (b \cdot c)$

Commutative Properties:

$a + b = b + a$
$a \cdot b = b \cdot a$

Distributive Property:

$a(b + c) = ab + ac$
$a(b - c) = ab - ac$

Identity Properties:

$a + 0 = 0 + a = a$
$a \cdot 1 = 1 \cdot a = a$

Inverse Properties:

$a + (-a) = -a + a = 0$
$a \cdot \dfrac{1}{a} = \dfrac{1}{a} \cdot a = 1, a \neq 0$

Multiplication Properties of 0 and -1:

$a \cdot 0 = 0 \cdot a = 0$
$a \cdot (-1) = (-1) \cdot a = -a$

So many properties

Skill Examples

Identify the property illustrated.

1. $-2 \cdot (7 \cdot 5) = -2 \cdot (5 \cdot 7)$

Commutative Property of Multiplication

2. $(-8) \cdot 1 = -8$

Identity Property of Multiplication

3. $3(6x + 2) = 18x + 6$

Distributive Property

4. $(w + 3) + 7 = w + (3 + 7)$

Associative Property of Addition

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Check your answers at BigIdeasMath.com.

Identify the property illustrated.

5. $(9 \cdot 4) \cdot 5 = 9 \cdot (4 \cdot 5)$

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6. $(-1) \cdot (-12) = 12$

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7. $2a + (-2a) = 0$

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8. $0 + 11c = 11c$

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9. $9m \cdot 0 = 0$

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10. $(5 - 2b) + 3 = (-2b + 5) + 3$

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11. $7n - 4n = (7 - 4)n$

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12. $\dfrac{1}{15d} \cdot 15d = 1$

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13. $x + (y + 6) = (x + y) + 6$

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14. $\left(\dfrac{1}{16}k\right)(-32) = (-32)\left(\dfrac{1}{16}k\right)$

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