Alg 1 Warm Up Block Week 2

Simplify each expression. Use properties to justify each step.

<u>Step</u> <u>Justification</u> That means write the property

1. $9(2x)$

$9(2x) = (9 \cdot 2)x$ _____

$= 18x$ _____

3. Simplify by using the distributive property.

$a) \quad 3(2x - 4)$ $b) -(8 - 4c)$

2. $(2 + 3x) + 9$

$(2 + 3x) + 9 = (3x + 2) + 9$ _____

$= 3x + (2 + 9)$ _____

$= 3x + 11$ _____

$c) \ (5 + 3x)6$ $d) -(2f + 3c)$

4. Simplify: $a) \ \ 6(8 - 2) - 2(9 \div 3 + 1)$ $b) \ \dfrac{\left(5^2 - (2 + 8)^2\right)}{5^2}$

5. *Evaluate* : $3x^2 - 4x + 2 \quad for \ \ x = -2$

Property names:

more

commutative, addition	commutative, multiplication
associative, addition	associative, multiplication
identity, addition	identity, multiplication
zero property of multiplication	multiplication property of -1

6. What is $\dfrac{6}{2}$? How do you know?

7. What is $\dfrac{0}{4}$? How do you know?

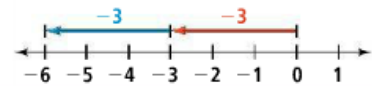8. What is $\dfrac{5}{0}$? How do you know?

take note

Key Concept   Multiplying Real Numbers

1-6

Words The product of two real numbers with *different* signs is *negative*.

Examples $2(-3) = -6$ $-2 \cdot 3 = -6$

Model $2(-3) = -6$
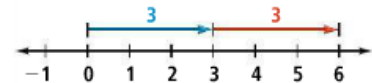
−3   −3

−6 −5 −4 −3 −2 −1   0   1

Words The product of two real numbers with the *same* sign is *positive*.

Examples $2 \cdot 3 = 6$ $-2(-3) = 6$

Model $2 \cdot 3 = 6$

3   3

−1   0   1   2   3   4   5   6

Does division work the same way?

Ⓒ **Problem 1** **Multiplying Real Numbers**

Plan

What is your first step in finding a product of real numbers?
Identify the signs of the factors. Then determine the sign of the product.

What is each product?

Ⓐ $12(-8) =$

Ⓑ $24(0.5) =$

Ⓒ $-\frac{3}{4} \cdot \frac{1}{2} =$

Ⓓ $(-3)^2 = (-3)(-3) =$

✓ **Got It?** **1.** What is each product?

a. $6(-15)$ **b.** $12(0.2)$ **c.** $-\frac{7}{10}\left(\frac{3}{5}\right)$ **d.** $(-4)^2$

1-6.A

Multiplying Integers

Name_____

Date_____ Period____

Find each product.

1) 6×-4

2) 4×2

3) 3×-4

4) -6×4

5) 5×-4

6) -3×4

7) -5×6

8) -2×-1

9) -8×-2

10) 11×12

11) -7×5

12) 9×-6

13) 10×5

14) 9×2

15) -12×7

16) 8×-12

17) $9 \times 10 \times 6$

18) $-6 \times -10 \times -8$

19) $7 \times 9 \times 7$

20) $6 \times 6 \times -2$

21) $-5 \times -4 \times -10$

22) $9 \times 9 \times -5$

23) $8 \times 3 \times 8$

24) $7 \times 5 \times -5$

1-6.B

Name_____

Dividing Integers

Date_____ Period_____

Find each quotient.

1) $35 \div -5$

2) $-8 \div 4$

3) $-24 \div 4$

4) $-8 \div -2$

5) $8 \div 4$

6) $-24 \div 8$

7) $-21 \div 7$

8) $6 \div -6$

9) $-132 \div -11$

10) $-60 \div -15$

11) $-52 \div -4$

12) $60 \div 12$

13) $6 \div -1$

14) $75 \div 15$

15) $65 \div -13$

16) $12 \div 4$

17) $-168 \div -12$

18) $-8 \div 2$

19) $\dfrac{-105}{7}$

20) $\dfrac{-4}{-1}$

21) $\dfrac{-10}{-2}$

22) $\dfrac{-144}{12}$

23) $\dfrac{24}{-12}$

24) $\dfrac{60}{-15}$

Problem 1 Simplifying Expressions

What is the simplified form of each expression?

A $3(x + 8)$ **B**

Got It? **1.** What is the simplified form of each expression?

Problem 3 Using the Multiplication Property of -1

Multiple Choice What is the simplified form of $-(2y - 3x)$?

Got It? **3.** What is the simplified form of each expression?

In an algebraic expression, a **term** is a number, a variable, or the product of a number and one or more variables. A **constant** is a term that has no variable. A **coefficient** is a numerical factor of a term. Rewrite expressions as sums to identify these parts of an expression.

$6a^2$, $-5ab$, $3b$, and -12 are terms.

$$6a^2 - 5ab + 3b - 12 = 6a^2 + (-5ab) + 3b + (-12)$$

coefficients   constant

In the algebraic expression $6a^2 - 5ab + 3b - 12$, the terms have coefficients of 6, -5, and 3. The term -12 is a constant.

Like terms have the same variable factors. To identify like terms, compare the variable factors of the terms, as shown below.

Terms

Variable Factors

Like Terms?

Problem 5 **Combining Like Terms**

What is the simplified form of each expression?

A $8x^2 + 2x^2$

B

Got It? **5.** What is the simplified form of each expression in parts (a)–(c)?

Practice

PT Week 2 Block
Error analysis   Semester 1   _____
                                                                            Name
                                                                            Per _____

In a recent activity, algebra students were asked to use the pythagorean theorem to decide if the 3 given numbers: 10,8,and 6 were sides of a right triangle. Below is the work for three different students. Each student has made **one** error. **Your job is to:**

- *Circle the ONE <u>mistake</u> you find in each student's work. Circle only the <u>first</u> mistake. Be sure that whatever you circle is <u>wrong</u>!*
- *Explain clearly what the student did wrong, and what the student should have done instead.*
- *Demonstrate how to solve the problem correctly, showing each step carefully in the space provided below. (Do this first, if you like.)*

Your work:	**Elmo's work:**
	$\left(a\right)^2+\left(b\right)^2=\left(c\right)^2$
	$\left(10\right)^2+\left(8\right)^2=\left(6\right)^2$
	$100+64=36$
	$164\neq36$
	Since 164 does not equal 36, 10,8 & 6 do not make a right triangle.
	Explanation of error:
Grover's work:	**Oscar's work:**
$\left(a\right)^2+\left(b\right)^2=\left(c\right)^2$	$\left(a\right)^2+\left(b\right)^2=\left(c\right)^2$
$\left(6\right)^2+\left(8\right)^2=\left(10\right)^2$	$\left(6\right)^2+\left(8\right)^2=\left(10\right)^2$
$14^2=10^2$	$12+16=20$
$196\neq100$	$28\neq20$
Since 196 does not equal 100, 10,8 & 6 do not make a right triangle.	Since 28 does not equal 20, 10,8 & 6 do not make a right triangle.
Explanation of error:	Explanation of error:

Algebra 1   *Week 3*

HW:
p 50: 9, 11, 13, 33, 37, 39, 55, 57, 63
pg 51; #75-79 odds
pg 52: #85-89 odds

p50 **(A) Practice**

Use the Distributive Property to simplify each expression.

9. $6(a + 10)$

11. $(5 + w)5$

13. $10(9 - t)$

Simplify each expression.

33. $-(20 + d)$

37. $-(18a - 17b)$

39. $-(-m + n + 1)$

Simplify each expression by combining like terms.

See Pr

55. $5t - 7t$

57. $5w^2 + 12w^2$

63. $-7h + 3h^2 - 4h - 3$

Simplify each expression.

75. $6yz + 2yz - 8yz$

77. $-9m^3n + 4m^3n + 5mn$

79. $12x^2y - 8x^2y^2 + 11x^2y - 4x^3y^2 - 9xy^2$

Simplify each expression.

85. $5(2d + 1) + 7(5d + 3)$

87. $9(5 + t) - 7(t + 3)$

89. $-(m + 9n - 12)$