ALG 1: RATIONAL NUMBERS

Tues 8/21

Page - 8 -

Objectives: The students will be able to solve problems by multiplying and dividing integers.

Multiplying and Dividing Integers

Rules for multiplying & dividing integers:

$2\overline{)10}$ → 5 → $2 * 5 = 10$

If the signs are the same: (+) positive result

If the signs are different: (−) negative result $-2\overline{)10}$ → -5 → $-2(-5) = 10$

Practice

Multiplication answer is a product.
Division answer is a quotient.

Simplify.

1. $-6 * (-2)$ same 12
2. $5 * -3$ diff -15
3. $3 * -5$ diff -15
4. $-2 * -3$ same 6
5. $5 \div (-1)$ diff -5
6. $-24 \div -3$ same 8
7. $3(-10)$ diff -30
8. $\frac{-36}{-9}$ same 4
9. $-6 * 4$ diff -24
10. $-2 * 10 * (-4)$ 80 — even (+)
11. $10(-6)(-2)(5)$ (60, 10) 600 — even (+)
12. $\frac{54}{-6}$ diff -9

Distributive Property

Objectives: The students will be able to use the distributive property to simplify variable expressions.

According to the **Distributive Property**, you **distribute** or "pass out" a multiplication to each part of a sum or difference in parentheses.

In $2(a + 3) = 2a + 6$, we "pass out" the 2 by multiplying it by both the *a* and the 3.

Multiply $6(x - 9)$

$6(x) - 6(9)$

$\boxed{6x - 54}$

Multiply $-3(h + 2)$

$-3(h) + -3(2)$

$\boxed{-3h + -6}$

Arithmetic

Order of Operations

$7(6 - 4)$

$7(2)$

$\boxed{14}$

Distributive property

$7(6 - 4)$

$7(6) - 7(4)$

$42 - 28$

$\boxed{14}$

Algebraic

$-2(x + 4)$

$-2(x) + -2(4)$

$\boxed{-2x + -8}$

change subtraction to "adding the opposite" first!

Practice

Use the distributive property to simplify.

1. $4(j + 10)$ $4j + 40$
2. $-1(4n - 6)$ $-4n + 6$
3. $-2(-g - 4)$ $2g + 8$
4. $(4c + 2)3$ $12c + 6$
5. $6(-2p + 7)$ $-12p + 42$
6. $5(2r - 4)$ $10r + (-20)$ → $10r - 20$