Name:_____  Date:_____

Notes
Algebra Section 2.4
Pages 88-93

Goal: "Multiply real numbers"

Multiplication:

Think socks! 
+ −

If your socks don't match, that's a negative!
If your socks match, that's a positive!

Negative X Negative=Positive


Match!

Negative X Positive=Negative


Don't Match!

Positive X Negative=Negative


Don't Match!

Ex: $-12(-10) =$ 120

Ex: $5(-8) =$ -40

Try These: Use highlighters to make your socks.

Ex: $-3(6)$ -18

Ex: $(-4)(-3)$ **12**

Ex: $4(-3)$ -12

Ex: $-2(-7)$ 14

Ex: $-0.5(-4)$ 2

Ex: $(-3)(7)$ -21

Example:

$2(-4)(-6)$ *Multiply $2(-4)$ first (socks don't match)
$-8(-6)$ * Multiply your outcome and (-6) (socks match)
48

Try These: Multiply the first two factors, then multiply that product and the third.

Ex: $-3(6)(-5)$ 90

Ex: $2(-4)(-3)$ 24

Ex: $4(-3)(5)$ -60

Ex: $-2(-7)(-3)$ -42

Ex: $-0.5(-4)(3)$ 6

Ex: $2(-3)(-1)$ 6

Properties:

Commutative Property: The order in which you multiply two numbers does not change the product.

Example: $a \cdot b = b \cdot a$ and $6 \cdot 3 = 3 \cdot 6$

Associative Property: The way you group three numbers in a multiplication problem does not change the product.

Example: $(a \cdot b) \cdot c = a \cdot (b \cdot c)$ and $(5 \cdot 6) \cdot 2 = 5 \cdot (6 \cdot 2)$

Identity Property: The product of a number and one is that number.

Example: $a \cdot 1 = a$ and $(-5) \cdot 1 = -5$

Property of Zero: The product of a number and zero is zero.

Example: $a \cdot 0 = 0$ and $(7) \cdot 0 = 0$

Property of -1: The product of a number and -1 is the opposite of the number.

Example: $a \cdot (-1) = -a$ and $(-4) \cdot (-1) = 4$

Try These:

Identify the property illustrated.

Ex: $-1 \cdot 8 = -8$
Property of -1

Ex: $12 \cdot x = x \cdot 12$
Commutative Property

Ex: $(y \cdot 4) \cdot 9 = y \cdot (4 \cdot 9)$
Associative Property

Ex: $0 \cdot (-41) = 0$
Property of Zero

Ex: $-5 \cdot (-6) = -6 \cdot (-5)$
Commutative Property

Ex: $-13 \cdot (-1) = 13$
Property of -1

Ex: The table gives the daily minimum temperatures (in degrees Fahrenheit) in Barrow, Alaska, for the first five days of February 2004. Find the mean daily minimum temperature.

Day in Feb.	1	2	3	4	5
Min. Temp.	–21	–29	–39	–39	–22

$-30°F$