

Feb. 18th, 2014

Feb. 20th, 2015

Feb. 23rd, 2016

# GRADE 9 Math (TASK 1 & 2)

## Mini-Lesson # 1

### ✂ 5.5 Multiplying Polynomials ✂

Everyone needs a bag of tiles

Feb 8-5:24 PM

Don't copy!

➔ First, lets recall the rules for multiplying and dividing integers...

$(-) \times (-) = (+)$

$(+) \times (+) = (+)$

$(-) \times (+) = (-)$

$(+) \times (-) = (-)$



Same for ÷

$(-) \div (-) = (+)$

$(+) \div (+) = (+)$


$(-) \div (+) = (-)$

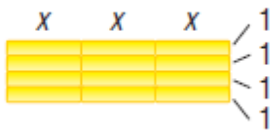
$(+) \div (-) = (-)$

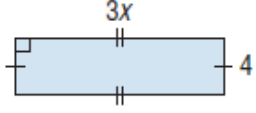


Feb 1-1:10 PM

**Connect**  $4 \times 2$  Don't copy!

**Model this:**  
The expression  $4(3x)$  is a product statement. 





Form 4 groups of  $3x$ 's Represented by an area of a rectangle!

$4(3x) = 12x$

$3(2x) = 6x$

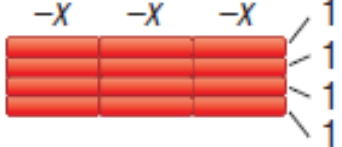
$25(2x) = 50x$

constant term by the coefficient

Sep 30-12:53 PM

**Connect** Don't copy!

**Model this:**  
 $4(-3x)$  is the product of 4 and the monomial  $-3x$ .



Form 4 groups of negative  $3x$ 's  $= -12x$   
 $12 -x$  tiles

Sep 30-12:53 PM

**Multiplying Polynomials**

Please copy!

**Distributive Property:** The property stating that a product can be written as a sum or difference of two products.

Ex:  $a(b + c) = ab + ac$  or  $a(b - c) = ab - ac$

Essentially... each term inside the brackets is multiplied by the term on the outside of the brackets.

$2(x + 3) = ?$

$\equiv 2 \times 3$

$[2 \times 3] [2 \times 3]$

$2(x + 3)$

$2x + 6$

Feb 1-1:10 PM

**Ex. 1**

**Multiplying a Polynomial by a Constant**

Determine the product:  $-2(-n^2 + 2n - 1)$

Use AlgebraTile

Distributive Property

Model 2 groups of  $(-n^2 + 2n - 1)$ :



But we don't want +2 groups of  $(-n^2 + 2n - 1)$ , we want -2 groups! So we flip all tiles that we just modeled:

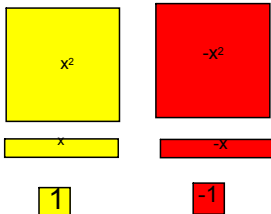


$2n^2 - 4n + 2$

$-2(-n^2 + 2n - 1)$

$2n^2 - 4n + 2$

Sep 22-8:25 PM

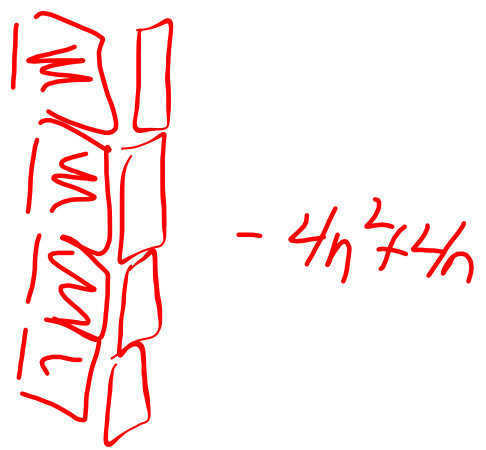


You Try!

Determine the product:  $-4(n^2 - n)$

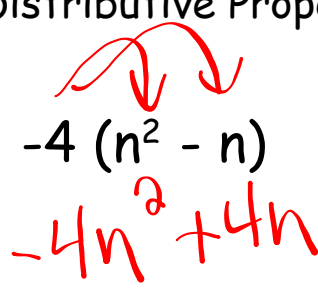
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Use AlgebraTile



$-4n^2 + 4n$

Distributive Property




$-4(n^2 - n)$   
 $-4n^2 + 4n$

Sep 22-8:25 PM

Ex. 2

A rectangle has the following dimensions.  
Write the multiplication sentence for the **area** of the rectangle.

$2n^2 - 4n + 3$




**Area = base x height**

$(2n^2 - 4n + 3) \cdot 3$

$3(2n^2 - 4n + 3)$

$3 \times 2 = 6$

$2 \times 3 = 6$



Feb 20-1:12 PM