Curriculum Outcome

- (PR 5)Demonstrate an understanding of polynomials (limited to of degree less than or equal to 2).
- (PR 6) Model, record and explain the operations of addition and subtraction of polynomial expressions, concretely, pictorially and symbolically (limited to polynomials of degree less than or equal to 2).
- (PR 7) Model, record and explain the operations of multiplication and division of polynomial expressions (limited to polynomials of degree less than or equal to 2) by monomials, concretely, pictorially and symbolically.

Student Friendly:
“Multiplying & Dividing Polynomials "

Warm Up Grade 9

Determine the product or the quotient.

a) $(7r)(11r)$

$= 77r^2$

b) $(6m^3 + 2m - 5)(-7m^2)$

$(-7m^2)$ $(6m^3 + 2m - 5)$

$-42m^5$ $-14m^3$ $+35m^2$

c) $\dfrac{-81td^2 - 72t^2d + 90td}{-9td}$

$\dfrac{-81td^2}{-9td}$ $\dfrac{-72t^2d}{-9td}$ $+\dfrac{90td}{-9td}$

$9d + 8t - 10$

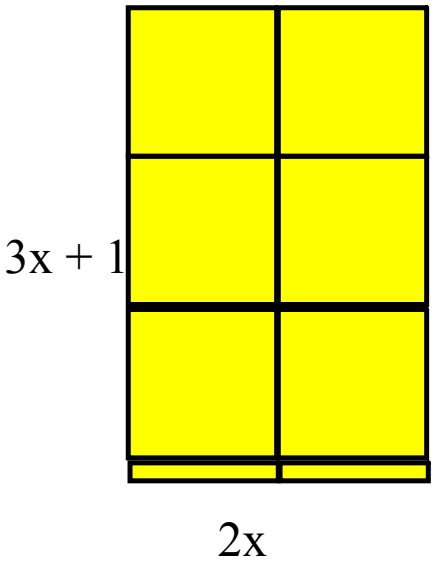
Section 5.6

Multiplying and Dividing a Polynomial by a Monomial

(2x) (3x + 1)

Is this possible?

Area = L x W



SOME REVIEW

Laws of Exponents

Remember... b^x → "b raised to the power of x" where, b – base
x – exponent

#1. PRODUCT - when multiplying...
"if the base is the same, then ADD the exponents."

$$b^m \times b^n = b^{m+n}$$

example:

$2^5 \times 2^6 =$

$(x^7)(x^3) =$

#2. QUOTIENT - when dividing...
"if the base is the same, then SUBTRACT the exponents."

$$\frac{b^m}{b^n} = b^{m-n}$$

example

$\frac{2^7}{2^4} =$

$\frac{x^8}{x^6} =$

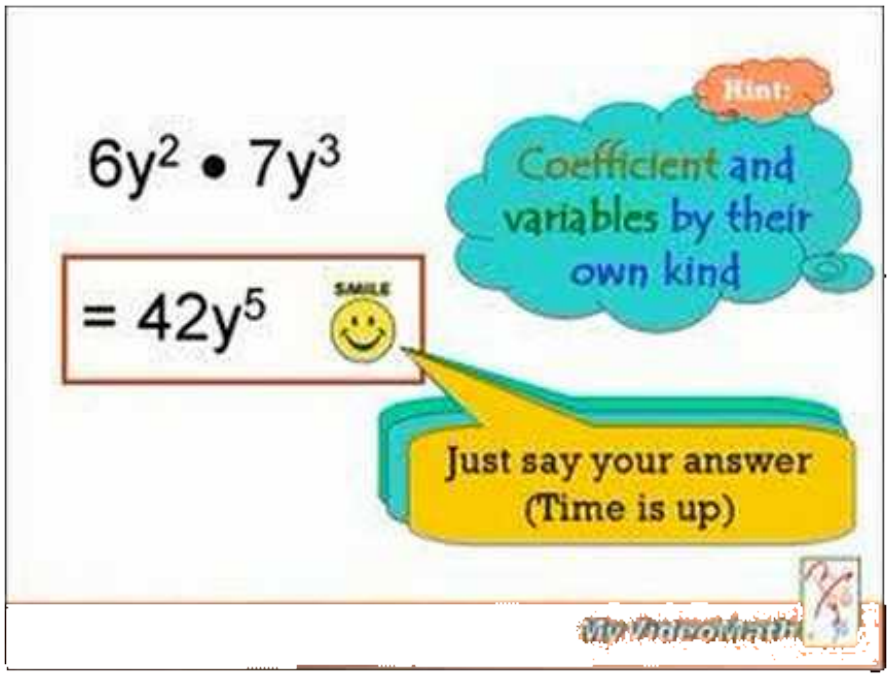
Multiplying a Monomial by a Monomial

Note:

Multiply coefficients with coefficients and variables with variables

Follow exponent laws for variable with the same base

$(11)(5y^2)$ $(-7n)(5n)$ $(8m^5)(4m^2x)$



Dividing a Monomial by a Monomial

Note:

Divide coefficients with coefficients and variables with variables

Follow exponent laws for variable with the same base

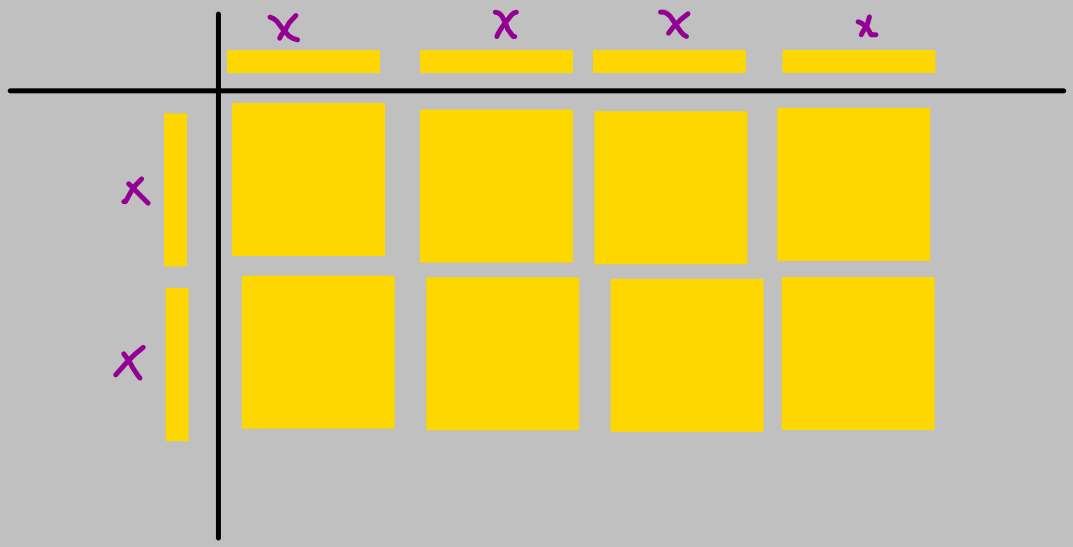
1) $\frac{-8x^2}{2x}$

2) $\frac{150y^5}{25y^2}$

Algebra Tiles

Multiplication

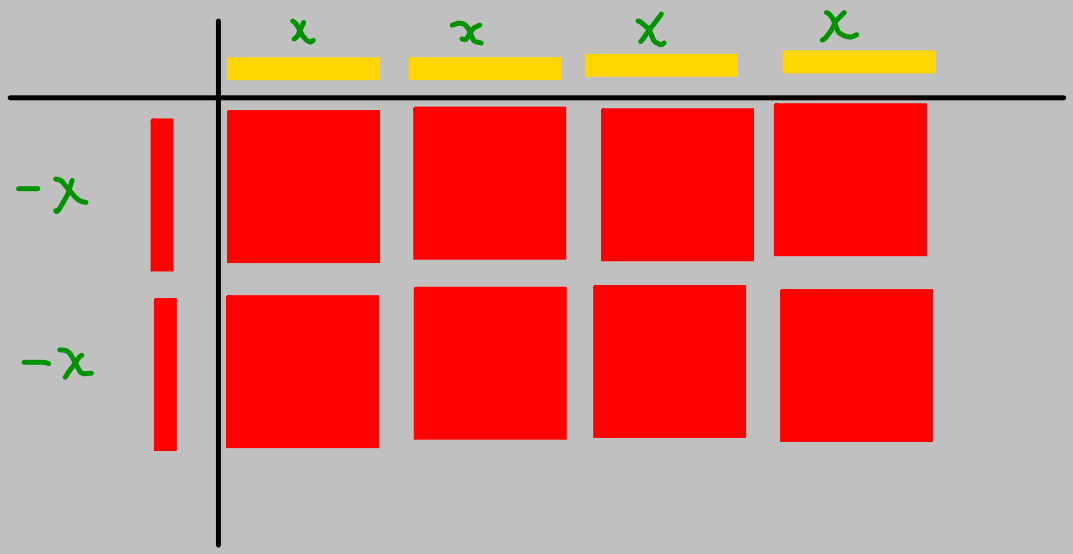
$(2x)(4x) = 8x^2$



Algebra Tiles

Multiplication

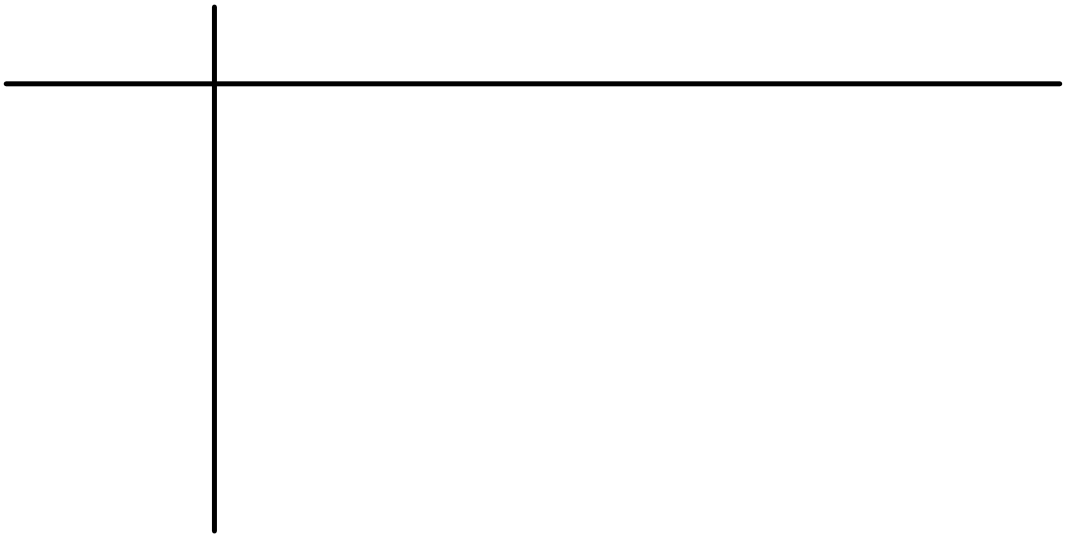
$(-2x)(4x) = -8x^2$



Algebra Tiles

Determine the product of each

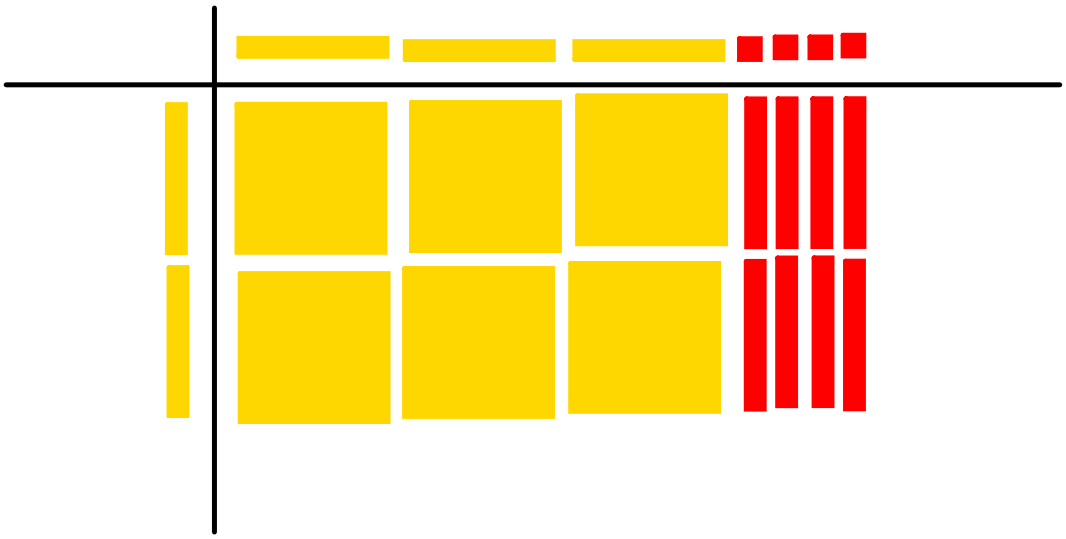
$$(2x)\,(3x - 4)$$



Algebra Tiles

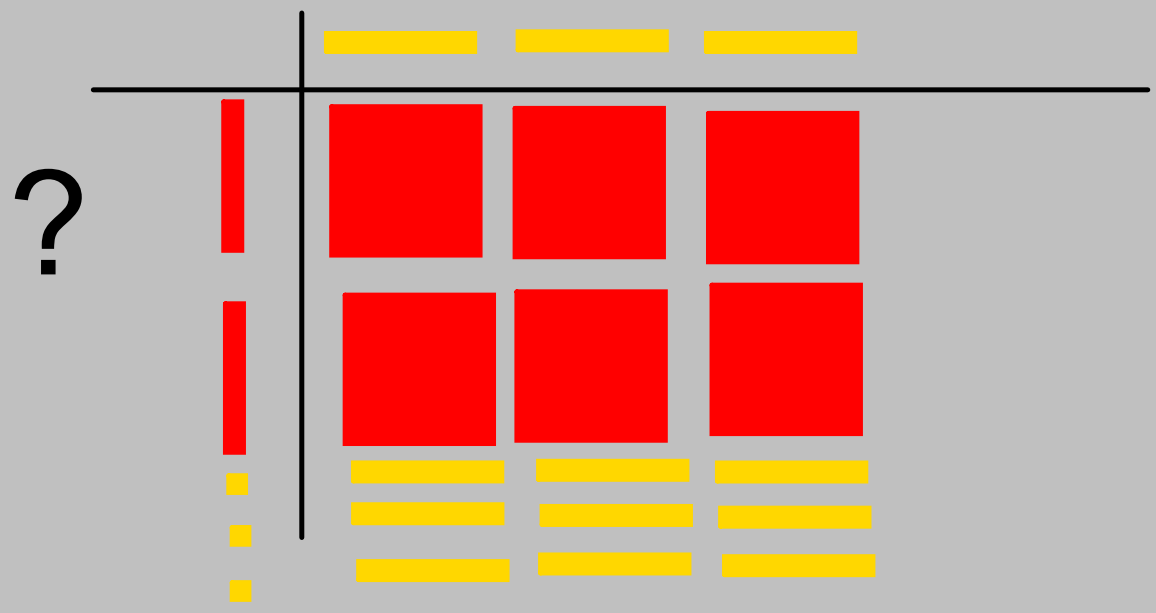
Determine the product of each

$(2x)(3x - 4) = 6x^2 - 8x$



Algebra Tiles

Division $\dfrac{(-6x^2 + 9x)}{(3x)} = -2x + 3$



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3bd, 5a, 6, 7a, 8a, 9ab, 11bde, 12,
13bdf, 14, 15, bdf, 16cdg,22bcd 23cd,

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16acfh, 19, 20bcd, 21bcd, 22, 25,