7.2 Multiplying Polynomials by Monomials

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* polynomials are made up of 2 or more terms connected by a "+" or "−"

ex $x+5$, $2d-2.4$, $3s^2-5s-6$

* to multiply a polynomial by a monomial algebraically, you can EXPAND the expression using the DISTRIBUTIVE PROPERTY
  - ↳ multiplying each term of the polynomial by the monomial

Ex. #1

$2(2x-1)$

monomial polynomial

"expand" or "distributive property"

$2(2x-1)$

$= 2(2x) - 2(1) = \boxed{4x-2}$

Ex #2

a) $-y(y^2-7)$

$= \boxed{-y^3+7y}$

b) $\frac{1}{2}a(2a+4)$

$= \frac{2a^2}{2} + \frac{4a}{2}$

$= \boxed{a^2+2a}$

c) $4x(x^2-x+7)$

$= \boxed{4x^3-4x^2+28x}$

Use a Model

Use a Model

Algebra Tiles

$3x(2x+1)$

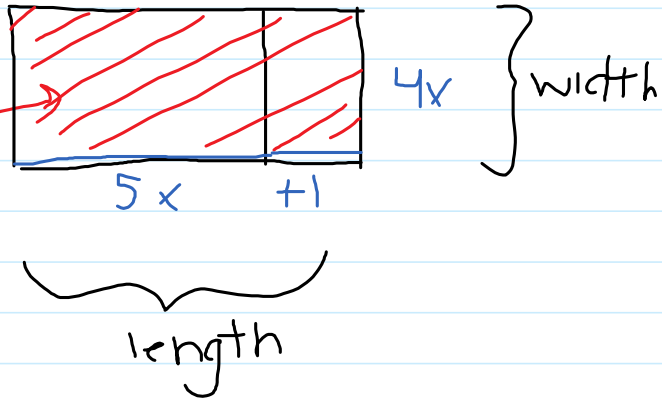
$= 6x^2 + 3x$

Area Model

$4x(5x+1)$

$= 20x^2 + 4x$

$=$ Area



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