

## 9.2 Modeling Polynomial Multiplication.

[http://nlvm.usu.edu/en/nav/category\\_g\\_4\\_t\\_2.html](http://nlvm.usu.edu/en/nav/category_g_4_t_2.html)

Virtual manipulatives  $\rightarrow$  Algebra tiles.

### Multiplying Binomials Special Products

$$1. (a+b)(a-b) = a^2 - b^2$$

$$2. (a+b)(a+b) = a^2 + 2ab + b^2$$

1. Square  
2. Mult/Double  
3. Square

$$3. (a-b)(a-b) = a^2 - 2ab + b^2$$

You should practice  
recognizing these.  
They make life so much easier.

Example #1:  $(x-6)(x+6) = x^2 - 36$

#2:  $(x+6)(x+6) = (x+6)^2 = x^2 + 12x + 36$

#3:  $(x-6)(x-6) = (x-6)^2 = x^2 - 12x + 36$

Example #4:  $(2x+6)(2x-6) = 4x^2 - 36$

#5:  $(2x+6)^2 = 4x^2 + 24x + 36$

#6:  $(2x-6)^2 = 4x^2 - 24x + 36$

Example #7:  $(8a^2+3)(8a^2-3) = (8a^2)^2 - (3)^2 = 64a^4 - 9$

#8:  $(8a^2+3)(8a^2+3) = (8a^2)^2 + 2(8a^2)(3) + (3)^2$   
 $= 64a^4 + 48a^2 + 9$

#9:  $(8a^2-3)(8a^2-3) = (8a^2)^2 - 2(8a^2)(3) + (3)^2$   
 $= 64a^4 - 48a^2 + 9$

9.3 Continues...