# Multiplying Binomials (Section 2-3)

* To multiply two binomials, you use the double distribute property (also known as FOIL)

ex: $(x-6)(4x+3)$

$= 4x^2+3x-24x-18$

$= 4x^2-21x-18$

combine "like" terms!

ex: $(2x+7)(3x-4)$

$= 6x^2-8x+21x+28$

$= 6x^2+13x+28$

ex: $(a-1)(a-11)$

$= a^2-11a-1a+11$

$= a^2-12a+11$

ex: $(3p+4)(2p+5)$

$= 6p^2+15p+8p+20$

$= 6p^2+23p+20$

* We are NOT using a product table like the book does.

ex: $(n-6)(4n-7)$

$= 4n^2-7n-24n+42$

$= 4n^2-31n+42$

ex: $(4w+13)(w+2)$

$= 4w^2+8w+13w+26$

$= 4w^2+21w+26$

#7 SA: 2 circles + circum · height

$SA = 2\pi r^2 + 2\pi rh$

$= 2\pi[(x+2)(x+2)+(x+2)(x+5)]$

$= 2\pi[x^2+4x+4+x^2+7x+10]$

$= 2\pi(2x^2+11x+14)$

$= \pi(4x^2+22x+28)$

#8 $SA = 2\pi(r^2+rh)$ (twice the radius)

$= 2\pi[(2x+3)(2x+3)+(2x+3)(4x+6)]$

$= 2\pi[4x^2+12x+9+8x^2+24x+18]$

$= 2\pi(12x^2+36x+27)$

$= \pi(24x^2+72x+54)$

* Multiplying a Trinomial & a Binomial: just double distribute!

ex: $(2x^2-3x+1)(x-3)$

$= 2x^3-3x^2+x-6x^2-9x-3$

$= 2x^3-9x^2-8x-3$

ex: $(2g+7)(3g^2-5g+2)$

$= 6g^3-10g^2+4g$

$+21g^2-35g+14$

$+$

$6g^3+11g^2-31g+14$

* You can line up "like" terms!