Any questions from last day's homework?
p. 218 # 6, 7, 8abce, 10 *(#10 is on the next slide)*

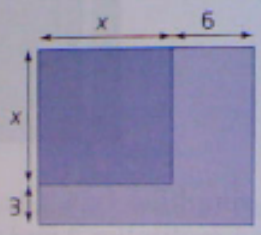
***Enrichment*:** pp. 218-219 #11, 12abc (in c), use a table of values), 14

Today's Learning Goal(s):

By the end of the class, I will be able to:

a) quickly square a binomial.
b) quickly multiply a sum and a difference.

10. A square garden has side length x. One dimension is increased by 6 m and the other is increased by 3 m.



a) Write an algebraic expression for the area of the original garden.

b) Write an algebraic expression for the area of the new garden.

c) Expand and simplify your area expression from part b).

d) Find an expression that represents the increase in area.

e) If x represents 12 m, find the increase in area.

a) $A = x^2$ b) $A = (x+6)(x+3)$

c) $A = x^2+3x+6x+18$

$= x^2+9x+18$

d) $A_{Increase} = x^2+9x+18 - x^2$

$= 9x+18$

e) $A_I = 9(12)+18$

$= 108+18$

$= 126\ m^2$

MPM 2DI

5.2 Special Products

Date: Nov. 9/16

A: Squaring a Binomial

Ex.1 Expand and simplify. (Look for a pattern)

a) $(x+3)^2$

$=(x+3)(x+3)$

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

$=x^2+6x+9$

b) $(x+10)^2$

$=(x+10)(x+10)$

$=x^2+10x+10x+100$

$=x^2+20x+100$

c) $(x-6)^2$

$=(x-6)(x-6)$

$=x^2-6x-6x+36$

$=x^2-12x+36$

d) $(x-4)^2$

$=x^2-8x+16$

e) $(2x+5)^2$

$=(2x)^2+2(2x)(5)+(5)^2$

$=4x^2+20x+25$

f) $(3x-1)^2$

$=9x^2-6x+1$

g) $(2x-5y)^2$

$=4x^2-20xy+25y^2$

h) $(4x+7y)^2$

$=16x^2+56xy+49y^2$

Summary:

$(a+b)^2$

$=a^2+2ab+b^2$

$(a-b)^2$

$=a^2-2ab+b^2$

The resulting product is called a:
perfect square trinomial.

Lame Poem:

Square the first, square the last,
Double the product, that was fast!

Extra practice: $(7c-2d)^2$

$=49c^2-28cd+4d^2$

B: The Product of a Sum and a Difference

Ex.2 Expand and simplify. (Look for a pattern)

a) $(x+3)(x-3)$ b) $(y-5)(y+5)$ c) $(2x+3)(2x-3)$ d) $(3x+5y)(3x-5y)$

$=x^2-3x+3x-9$ $=y^2+5y-5y-25$ $=4x^2-9$ $=9x^2-25y^2$

$=x^2-9$ $=y^2-25$

i) Describe the original binomials.

ii) How can we quickly get the **first** term of the result?

iii) How can we quickly get the **last** term of the result?

iv) What happened to the **middle** term?

Summary:

$(a+b)(a-b)$

$= a^2-b^2$

The resulting product is called a: difference of squares.

Extra practice: $(8c+11d)(8c-11d)$

$=64c^2-121d^2$

Today's practice: pp. 225-227 #3ad, 4ad, 5ad, 6ad, 8 ($A=\pi r^2$), 10 (set up a LS and RS chart for 10c), 12, 19d

***Enrichment*:** pp. 226-227 #13, 14ab, 16