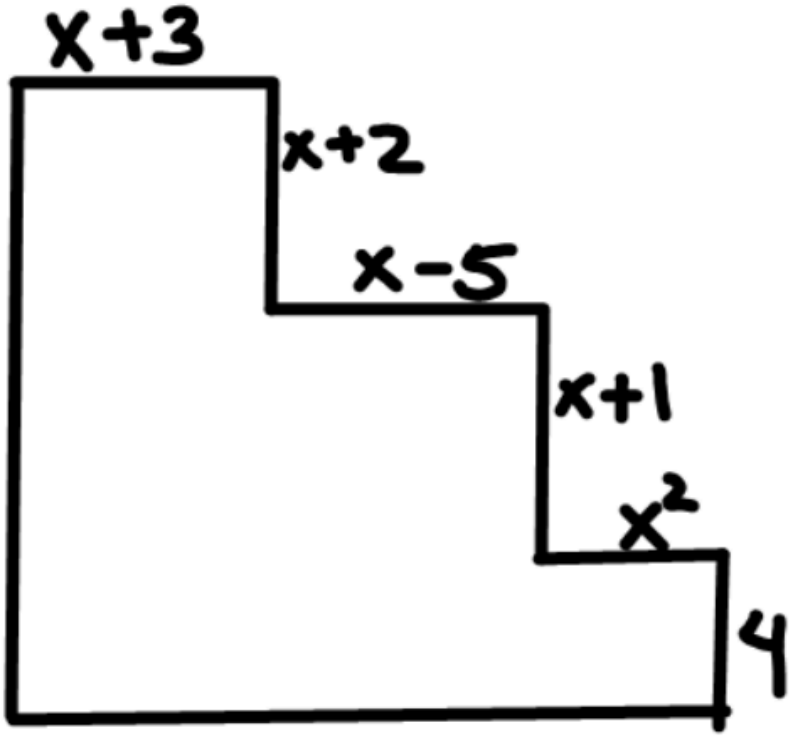
Foil:

$(p + \text{  })(a+n)$

Staircase Problem



Come up with an example of a binomial times a binomial that equals a binomial

$(x-1)(x+1)$

$x^2 + x - x - 1$

$x^2 - 1$

CHECK HOMEWORK

QUIZ MONDAY

Classifying Polynomials
Adding and Subtracting Polynomials
Multiplying Polynomials (including special products)

Objective

Find special products of binomials.

A perfect-square trinomial is a trinomial that is the result of squaring a binomial.

Do you see a pattern?

1) $(x+6)^2 \neq x^2+36$

$(x+6)(x+6)$ $x^2+12x+36$

2) $(x+3)^2$ x^2+6x+9

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

Do you see a pattern?

1) $(5a+b)^2$ $\quad 25a^2 + 10ab + b^2$

$2(5ab)$

2) $(4a+1)^2$ $\quad 16a^2 + 8a + 1$

$2[4a(1)]$

3) $(4x+3y)^2$ $\quad 16x^2 + 24xy + 9y^2$

$2[4x(3y)]$

Can you apply the pattern here?

Multiply.

A. $(x - 6)^2$

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

$2[x(-6)]$

$x^2 - 12x + 36$

B. $(4m - 10)^2$

$(4m-10)(4m-10)$

$16m^2 - 80m + 100$

Can you apply the pattern here?

Multiply.

C. $(2x - 5y)^2$

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

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

D. $(7 - r^3)^2$

$r^6 - 14r^3 + 49$

Difference of Squares:

It is the result of multiplying $(a - b)(a + b)$.

Do you see a pattern?

1) $(x+4)(x-4)$ x^2-16

2) $(x+10)(x-10)$ x^2-100

3) $(2x+1)(2x-1)$ $4x^2-1$

Do you see a pattern?

1) $(p^2 + 8q)(p^2 - 8q)$

$p^4 - 64q^2$

$(p^2)^2$ $(8q)^2$

2) $(x^3 - 2)(x^3 + 2)$

$x^6 - 4$

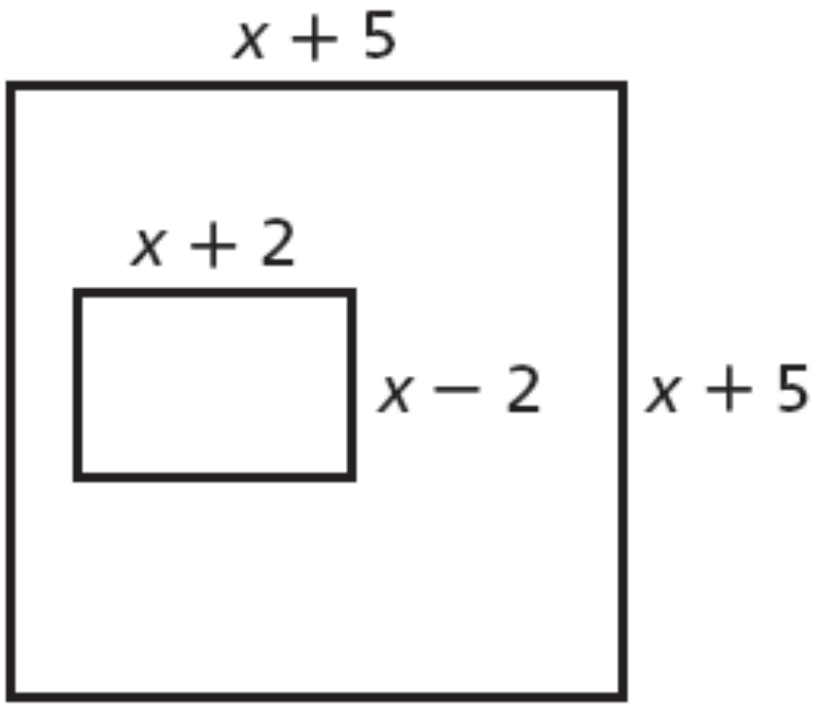
$(x^3)^2$ $(2)^2$

$(x+7)(x+7) \neq x^2+49$

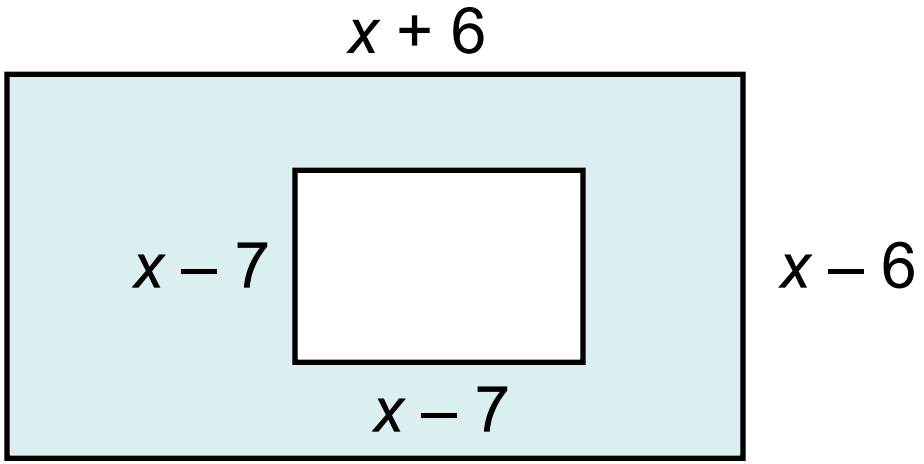
Multiply.

1. $(x + 7)^2$ $x^2+14x+49$
2. $(x - 2)^2$ x^2-4x+4
3. $(5x + 2y)^2$ $25x^2+20xy+4y^2$
4. $(2x - 9y)^2$ $4x^2-36xy+81y^2$ $(4x)^2$
5. $(4x + 5y)(4x - 5y)$ $16x^2-25y^2$ $(5y)^2$
6. $(m^2 + 2n)(m^2 - 2n)$ m^4-4n^2

Write a polynomial that represents the area of the yard around the pool shown below.



Write a polynomial that represents the shaded area of the figure below.



Special Products of Binomials

when you square a binomial, you get a perfect square trinomial

Perfect-Square Trinomials

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

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

Difference of Two Squares

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

LET'S PLAY WITH ALGEBRA TILES

HOMEWORK

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