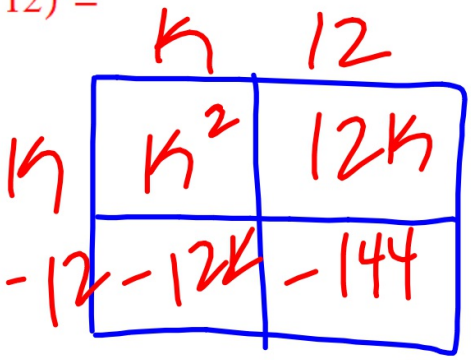
1. $(k+12)(k-12) =$



k^2-144

2. $(5g+16)(5g-16) =$

$25g^2-256$

3. $(8m^4 - 7p^3)(8m^4 + 7p^3) =$ $(8m^4)^2 - (7p^3)^2$

$64m^8 - 49p^6$

4. $(Q-9)^2 =$ $(Q-9)(Q-9)$

$Q^2 - 18Q + 81$

$4^2 = 16$

$4 \cdot 4$

5. $(4b - 11)^2 =$ $(4b-11)(4b-11)$

$16b^2 - 88b + 121$

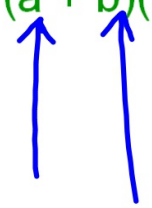
Sec 9-4: Expanding Special Cases

Terms like the following $(x + 2)(x - 2)$

Are called CONJUGATES

Result of multiplying Conjugates

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



1. Expand each. Write answer in Standard Form.

a. $(c + 11)(c - 11)$

$c^2 - 121$

b. $(2e + 9)(2e - 9)$

$(2e)^2$

$4e^2 - 81$

c. (3h + 7k)(3h - 7k)

$(3h)^2 - (7h)^2$

$9h^2 - 49h^2$

d. (4h + 9)(4h - 9)

$16h^2 - 81$

Rule **The Square of a Binomial**

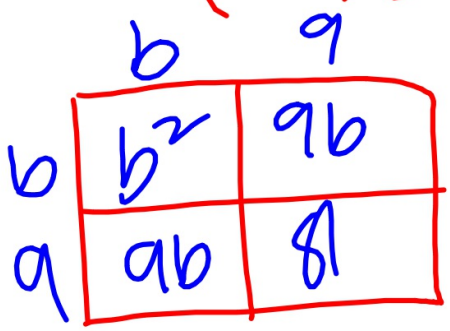
$(a + b)^2 = a^2 + 2ab + b^2$

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

The square of a binomial is the square of the first term plus twice the product of the two terms plus the square of the last term.

Find each product. $b^2+18b+81$

1. $(b + 9)^2$ $(b+9)(b+9)$



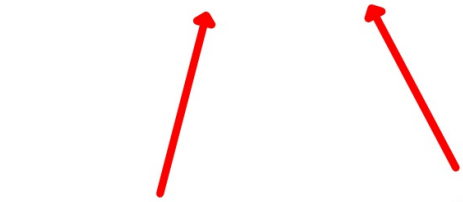
2. $(g - 7)^2$ $g^2-14g+49$

3. Expand $(N + 10)^2$ $N^2+20N+100$

4. Expand $(R - 8)^2$ $R^2-16R+64$

$(a + 5)^2$ When coefficient of the variable is 1:

$a^2 + 10a + 25$



twice the constant (include the sign)

constant squared

Why will the sign on the constant in the trinomial always be POSITIVE?

5. Expand.

$(2a + 5)^2$ $4a^2 + 20a + 25$

Expand each.

6. $(e + 7f)^2$

$e^2 + 14ef + 49f^2$

7. $(2c^3 - 5d)^2$

$4c^6 - 20c^3d + 25d^2$

	$2c^3$	$-5d$
$2c^3$	$4c^6$	$-10c^3d$
$-5d$	$-10c^3d$	$25d^2$

$(2a + 5)^2$

When coefficient of the variable isn't 1:

$a^2 + 20a + 25$

twice the product of the coefficient and the constant

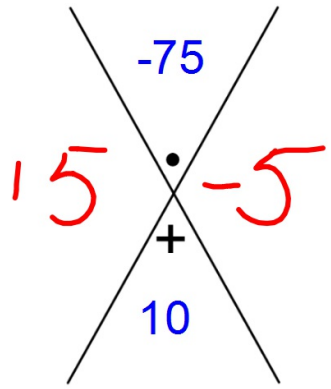
constant squared

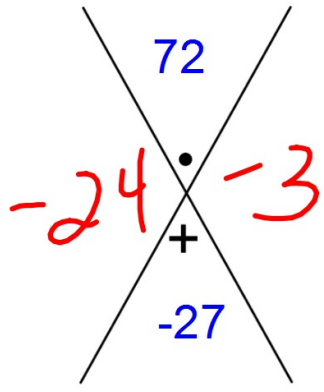
In general: $(ax + b)^2$

$$(ax)^2 + 2ab + b^2$$

In general: $(ax - b)^2$

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





Expanding Jeopardy: The work for exanding two binomials is shown but some of the begining information has been lost. Can you fill in the missing information?

$(x-5)(2x+7)$

	x	-5
$2x$	$2x^2$	$-10x$
7	$+7x$	-35

Expanding Jeopardy: The work for exanding two binomials is shown but some of the begining information has been lost. Can you fill in the missing information?

$(3x+2)(x+8)$

	$3x$	2
x	$3x^2$	$+2x$
8	$+24x$	$+16$

Expanding Jeopardy: The work for exanding two binomials is shown but some of the begining information has been lost. Can you fill in the missing information?

$(x-6)(x+4)$

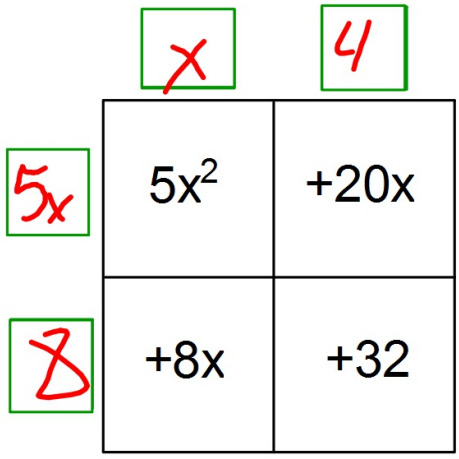
	x	-6
x	x^2	-6x
4	+4x	-24

Expanding Jeopardy: The work for exanding two binomials is shown but some of the begining information has been lost. Can you fill in the missing information?

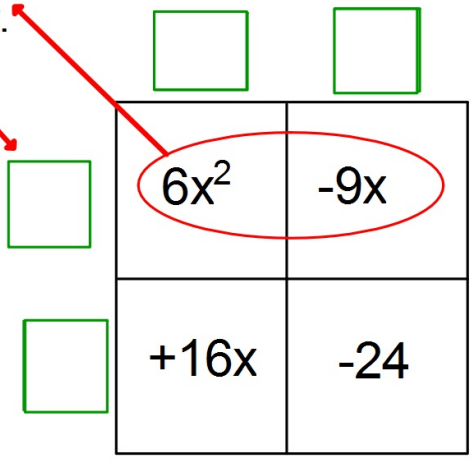
$(2x-3)(4x-9)$

	2x	-3
4x	$8x^2$	-12x
-9	-18x	+27

What do you do if ALL of the outside terms are missing?



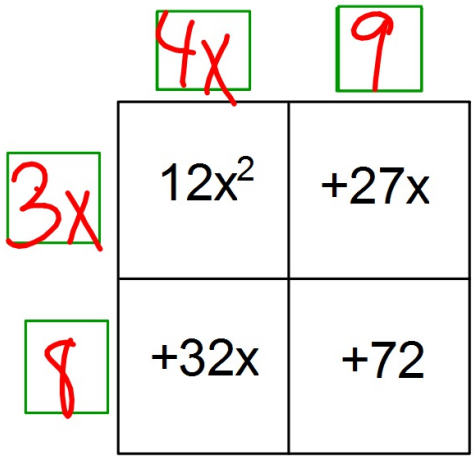
Start with the GCF of the top row.



Once you've found the GCF of the top row you can continue around the Box and find the remaining three parts.

3x	$6x^2$	-9x
	+16x	-24

	6x	-7
5x	$30x^2$	-35x
-1	-6x	+7


4x
9
3x
12x²
+27x
8
+32x
+72