

## 8-6A: Factoring Trinomials: $ax^2 + bx + c$

**Due next class: p.401 #1-13 odds**

**Due today p.397 #6-16 evens, #17-29 odds Challenge: #33, 55, 59**

6.  $(n-2)(n-1)$

19.  $(k+1)(k-9)$

8.  $(y+4)(y+2)$

21.  $(x+4)(x-1)$

33.  $(t+9v)(t-2v)$

10.  $(p+18)(p+1)$

23.  $(y+5)(y-4)$

55.  $4x^2+12x+5$

12.  $(w+5)(w+1)$

25.  $(x-16)(x+2)$

$(2x+1)(2x+5)$

14.  $(d+19)(d+2)$

27.  $(m+2)(m-15)$

59.  $(x^6+7)(x^6+5)$

16.  $(q-15)(q-3)$

29.  $(p+3)(p-18)$

17.  $(m-2)(m+5)$

### *Missing Chapter 8 Quiz*

Period 3:

Andrea A.

Period 2:

Luis A.

Holly B.

Nate C.

Edwin G.

Andrea H.

**25.**  $x^2 - 14x - 32$

~~$\begin{array}{cc} & -32 \\ -16 & 2 \\ & -14 \end{array}$~~   $(x-16)(x+2)$

**Complete.** *Factor into two binomials.*

1.  $t^2 + 7t + 10 = (t + 2)(t + \blacksquare)$       2.  $y^2 - 13y + 36 = (y - 4)(y - \blacksquare)$

3.  $x^2 - 8x + 7 = (x - 1)(x - \blacksquare)$       4.  $x^2 + 9x + 18 = (x + 3)(x + \blacksquare)$

**Factor each expression. Check your answer.**

5.  $r^2 + 4r + 3$

6.  $n^2 - 3n + 2$

7.  $k^2 + 5k + 6$

8.  $y^2 + 6y + 8$

9.  $x^2 - 2x + 1$

10.  $p^2 + 19p + 18$

11.  $k^2 - 16k + 28$

12.  $w^2 + 6w + 5$

13.  $m^2 - 9m + 8$

14.  $d^2 + 21d + 38$

15.  $t^2 - 13t + 42$

16.  $q^2 - 18q + 45$

1) Multiply the two binomials. (FOIL or Box)

$(3x + 1)(5x - 4)$

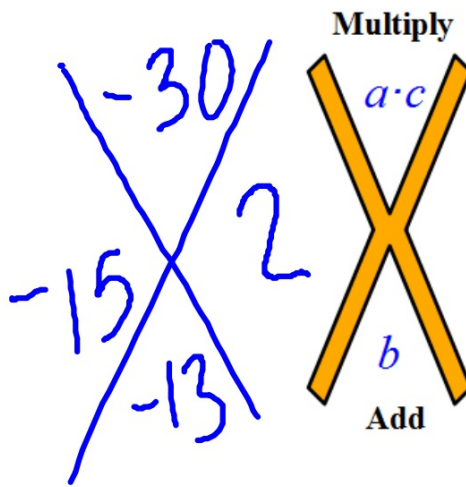
	$5x$	$-4$
$3x$	$15x^2$	$-12x$
$1$	$5x$	$-4$

$15x^2 - 7x - 4$

2) Factor the trinomial into two binomials.

$$x^2 - 13x - 30$$

$$(x - 15)(x + 2)$$



# How do we factor this trinomial?

$$12x^2 + 17x + 6$$

$$\begin{array}{cc} 8 & 72 \\ & \times \\ & 9 \\ 17 & \end{array}$$

~~$(x+8)(x+9)$~~

~~$x^2 + 9x + 8x + 72$~~

~~$x^2 + 17x + 72$~~

Multiply  $a \cdot c$   
 Add  $b$

$ax^2 + bx + c$   
 $12x^2 + 17x + 6$

~~72~~  
~~9~~ ~~8~~  
~~17~~

$3x$   
 $2$

$4x$	$3$
$12x^2$	$9x$
$8x$	$6$

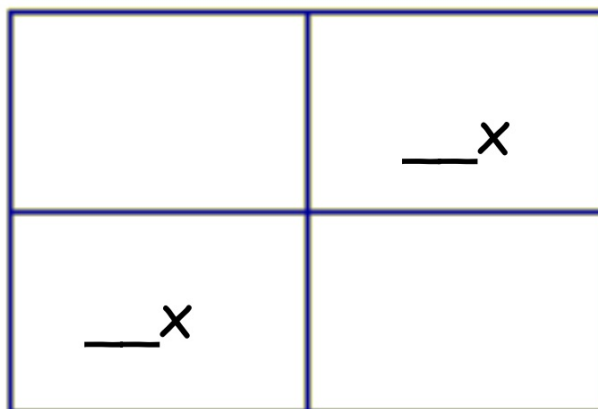
$(3x+2)(4x+3)$

- 1) Identify a, b, and c.
- 2) fill out and solve the diamond
- 3) fill out the rectangle
- 4) Find the GCF
- 3) fill in the rest of the rectangle and find your factors



$$ax^2 + bx + c$$

$$3x^2 + 19x + 20$$



a  
c

- 1) Identify a, b, and c.
- 2) fill out and solve the diamond
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$$3x^2 + 19x + 20$$

Handwritten work for factoring  $3x^2 + 19x + 20$  using the AC method:

The numbers 15 and 4 are circled, with a 60 written above them and a 19 written below them, indicating that  $15 \times 4 = 60$  and  $15 + 4 = 19$ .

	$x$	$5$
$3x$	$3x^2$	$15x$
$4$	$4x$	$20$

$$(3x + 4)(x + 5)$$

1.  $2n^2 + 15n + 7$

~~14~~  
~~15~~

<del>1</del>	<del>14</del>	n	$2n^2$	1n
		7	14n	7

$(n+7)(2n+1)$

2.  $7d^2 + 50d + 7$

Factor each expression.

1.  $2n^2 + 15n + 7$

2.  $7d^2 + 50d + 7$

3.  $11w^2 - 14w + 3$

4.  $3x^2 - 17x + 10$

5.  $6t^2 + 25t + 11$

6.  $3d^2 - 17d + 20$

7.  $16m^2 + 26m + 9$

8.  $15p^2 - 26p + 11$

9.  $8y^2 + 30y + 13$

10.  $2y^2 + 35y + 17$

11.  $7x^2 - 30x + 27$

12.  $8x^2 + 18x + 9$

13.  $2t^2 - t - 3$

~~$\begin{array}{cc} 66 & 3 \\ 22 & 25 \end{array}$~~

~~$\begin{array}{cc} 33 & -11 \\ -3 & -14 \end{array}$~~

$11w - 3$

$w$	$11w^2$	$-3w$
$-1$	$-11w$	$3$

$(w-1)(11w-3)$