

Final product  $(4y+3)(3y+2)$   
 $12y^2 + 23y + 24$

$(5m+6)(5m-6)$   
 $25m^2 - 36$

$(4g-5)^2$   
 $16g^2 - 40g + 25$

# 4.4 Solve $ax^2 + bx + c = 0$ by Factoring

In Warmup, look at 1<sup>st</sup> & last terms...

$12y^2$  came from  $4y \cdot 3y$      $25m^2$  from  $5m \cdot 5m$      $16g^2$  from  $4g \cdot 4g$

\*\* were the 1<sup>st</sup> in binomials \*\*

$-24$  from  $-3 \cdot 8$

$-36$  from  $6 \cdot -6$

$25$  from  $-5 \cdot -5$

\*\* were last in binomials \*\*

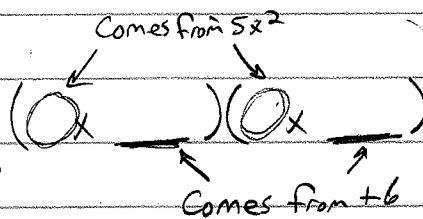
## Factoring $ax^2 + bx + c$

$5x^2 - 17x + 6$

$1x \cdot 5x$

$1 \cdot 6$   
 $2 \cdot 3$   
 $-1 \cdot 6$   
 $-2 \cdot 3$

1<sup>st</sup> - Factor both 1<sup>st</sup> & last terms



2<sup>nd</sup> - Use trial & error, and intuition/FOIL

$(5x - 2)(x - 3)$

\* need to get  $-17$ , so think of negative #'s

$-1 \cdot -6$  or  $-2 \cdot -3$

Hey...  $5 \cdot -3 = -15$ , which is close to  $-17$ , so try it

$(5x - 2)(x - 3)$  - check O & I

$5x \cdot -3 + -2 \cdot 1x$

$-15x + -2x = -17x$  - Yes! NO!!

$(5x - 2)(x - 3)$

## Factor

1)  $3x^2 - 20x - 7$

2)  $4x^2 - 81$

3)  $9y^2 + 12y + 4$

4)  $4r^2 - 28r + 49$

$(3x - 7)(x + 1)$

$(2x - 9)(2x + 9)$

$(3y + 2)(3y + 2)$

$(2r - 7)(2r - 7)$