

9.5 - Factoring Quadratics

Vocabulary:

Factor

Quadratic

FOIL

$1 + 12$	13
$2 + 6$	8
$3 + 4$	7

$$x^2 + 7x + 12$$

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

~~$3x + 4x$~~

$$x^2 + 7x + 12$$

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

1 EXAMPLE Factor $x^2 + 8x + 15$. $\overset{1}{3} + 5$

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

$$x^2 + 3x + 2$$

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

2 **EXAMPLE** Factor $c^2 - 9c + 20$.

$$(c - 4)(c - 5)$$

$$x^2 - 7x + 12$$

$$(x - 3)(x - 4)$$

3 EXAMPLEa. Factor $x^2 + 13x - 48$.

$$(x + 16)(x - 3)$$

$$16x - 3x$$

$$13x$$

$$\begin{array}{r} -1 \quad -48 \\ +2 \quad 24 \\ \hline 3 \quad 16 \end{array}$$

$$\begin{array}{cc} 3 & 8 \\ 4 & 6 \\ 2 & 12 \end{array}$$

b. Factor $n^2 - 5n - 24$.

$$(n + 3)(n - 8)$$

$$3n - 8n$$

$$-5n$$

$$x^2 - 4x - 12$$

$$(x+2)(x-6)$$

-4x

4

EXAMPLE

Factor $d^2 + 17dg - 60g^2$.

$$d^2 + \underline{17d} - 60$$

$$1 \quad 60$$

$$2 \quad 30$$

$$3 \quad 20$$

$$(d + 20g)(d - 3g)$$

$$d^2 + 20gd - 60g^2 \quad -3gd$$

$$d^2 + 17gd - 60g^2$$

