Factoring Polynomials

Find:
Example / Problem

How many terms does the quadratic have?

2

3

1) GCF

2) Set factors equal to 0

Example 1

$4y^2 + 16y = 0$

$4 \cdot 1 \cdot y \cdot y + 4 \cdot 4 \cdot y = 0$

$4y(y + 4) = 0$

$\frac{4y}{4} = \frac{0}{4}$ $\quad y + 4 = 0$

$y = 0$ $\quad y = -4$

Example 2

$3x^2 - 12 = 0$

$3 \cdot 1 \cdot x \cdot x - 3 \cdot 4 = 0$

$3(x^2 - 4) = 0$

$3 \neq 0$ $\quad x^2 - 4 = 0$

$\sqrt{x^2} = \sqrt{4}$

$x = \pm 2$

1) GCF $a = 1$

2) Set factors equal to 0

$x^2 + 16x + 64 = 0$

$a \cdot c$ $\quad 1 \cdot 64$

64

$+8$ $\quad +8$

16 $\quad b$

$(x+8)(x+8) = 0$

$x + 8 = 0$ $\quad x + 8 = 0$

$x = -8$

1 solution

1) GCF $a \neq 1$ NO GCF

2) Set factors equal to 0

$7x^2 - 15x + 2 = 0$

$a \cdot c = 7 \cdot 2$

14

-14 $\quad -1$

-15 $\quad b$

$(7x - 14)(7x - 1) = 0$

$7 \cdot 1 \cdot x - 7 \cdot 2$

$7(x - 2)(7x - 1) = 0$

$(x - 2)(7x - 1) = 0$

$x - 2 = 0$ $\quad 7x - 1 = 0$

$x = 2$ $\quad x = \frac{1}{7}$