

What you will learn about:
Use strategies to rewrite quadratics in equivalent forms

Standard Form
Start with highest power and work to constant

1. Use the distributive property to expand and combine like terms to write each of the following expressions in equivalent standard form. $ax^2 + bx + c$

a. $(3+x)x = 3x + x^2$ $x^2 + 3x$

b. $5x(4x - 11) = 20x^2 - 55x$

c. $7x(11 - 4x) = 77x - 28x^2$ $-28x^2 + 77x$

d. $7x(x + 2) - 19$

$7x^2 + 14x - 19$

e. $-9(5 - 3x) + 7x(x + 4)$

$-45 + 27x + 7x^2 + 28x$

$-45 + 55x + 7x^2$

$7x^2 + 55x - 45$

Greatest Common Factor (GCF)
Largest number that divides into All terms evenly.

2. Use the distributive property to write each of these quadratic expressions in equivalent form as a product of two linear factors. Factor out the greatest common factor

a. $7x^2 - 11x$ GCF = x

$x(7x - 11)$

$$\begin{aligned} \text{GCF} &= 3x \\ 3x(-x-3) \end{aligned}$$

Expanded (Standard Form)

$$7x^2 - 25x$$

Factorial Form (GCF)

$$x(7x-25)$$

$$\text{b. } 12x + 4x^2 \quad \text{GCF} = 4x$$

$$4x(3+x)$$

$$\text{c. } -3x^2 - 9x$$

$$\text{GCF} = -3x$$

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

3. Use what you know about ways of writing algebraic expressions in equivalent forms to produce simplest possible expanded and where possible factored forms of these expressions. Make sure all answers are in standard form.

$$\text{a. } (14x^2 + 3x) - 7x(4+x)$$

$$14x^2 + 3x - 28x - 7x^2$$

$$7x^2 - 25x$$

$$\text{GCF} = x$$

$$x(7x-25)$$

$$\text{b. } -x + 4x(9-2x) + 3x^2$$

$$-x + 36x - 8x^2 + 3x^2$$

$$35x - 5x^2$$

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

$$\text{GCF} = -5x$$

$$-5x(x-7)$$

$$\text{c. } 5x(2x-1) + 4x^2 - 2x$$

$$10x^2 - 5x + 4x^2 - 2x$$

$$14x^2 - 7x$$

$$\text{GCF} = 7x$$

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

$$\text{d. } (5x^2 - 4) - 3(4x + 8x^2) - 25x$$