Guiding Question: Can I use the Quadratic Formula to solve quadratic equations?

p.70-71 Solving Quadratics by using the Quadratic Formula

Warm-up

p.70

Find solutions to the quadratic equation by FACTORING

$x^2 - 15x + 56 = 0$

-15, $-7x$, $-8x$, 56

	x	-8
x	x^2	$-8x$
-7	$-7x$	56

$(x^2 - 7x - 8x + 56)$ $(x-7)(x-8)=0$

$x(x-7) - 8(x-7)$ $x-7=0$ or $x-8=0$

$x = \{7, 8\}$

p.70-71 Solving Quadratics by using the Quadratic Formula

Solving a Quadratic Equation with Two Real Solutions

p.71

Quadratic Formula: $x = \dfrac{-b \pm \sqrt{b^2 - 4ac}}{2a}$

1.) Solve: $3x^2 + 8x = 35$

Write in standard form: $3x^2+8x-35=0$

a = 3 b = 8 c = −35

Substitute values into formula and simplify.

$x = \dfrac{-8 \pm \sqrt{(8)^2 - 4(3)(-35)}}{2(3)}$

$x = \dfrac{-8 \pm \sqrt{484}}{6}$

$x = \dfrac{-8 \pm 22}{6}$

$x = \dfrac{(-8+22)}{6}$ or $x = \dfrac{(-8-22)}{6}$

$x = 2.\overline{3}$ & $x = -5$

p.70-71 Solving Quadratics by using the Quadratic Formula

Solving a Quadratic Equation with One Real Solution

Quadratic Formula: $x = \frac{-b \pm \sqrt{b^2 - 4ac}}{2a}$

p.71

2.) Solve: $2x^2 + 13 = 12x - 5$

Write in standard form: $2x^2 - 12x + 18 = 0$

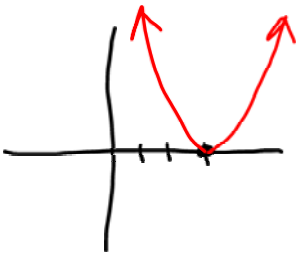
a = 1 b = −6 c = 9 $2(x^2 - 6x + 9) = 0$

Substitute values into formula and simplify.

$$X = \frac{-(-6) \pm \sqrt{(-6)^2 - 4(\quad)(\quad)}}{2(1)}$$

$$X = \frac{6 \pm \sqrt{0}}{2}$$

$$X = \frac{6}{2} = 3$$



p.70-71 Solving Quadratics by using the Quadratic Formula

Solving a Quadratic Equation with Two Imaginary Solutions

Quadratic Formula: $x = \frac{-b \pm \sqrt{b^2 - 4ac}}{2a}$

p.71

3.) Solve: $-2x^2 = -2x + 3$

Write in standard form: $+2x^2 \quad +2x^2$ $0 = 2x^2 - 2x + 3$

a = 2 b = −2 c = 3

Substitute values into formula and simplify.

$$X = \frac{-(-2) \pm \sqrt{(-2)^2 - 4(2)(3)}}{2(2)}$$

$$X = \frac{2 \pm \sqrt{-20}}{4}$$

$$X = \frac{2 \pm 2i\sqrt{5}}{4}$$

$\sqrt{-20}$

$\sqrt{-1}$ $\sqrt{20}$

$4\sqrt{5}$

2 2

Homework: Quadratic Formula Worksheet