Bellwork Alg 2 Friday, October 12, 2018

Find all EXACT COMPLEX solutions to each quadratic using these methods: Factoring, Square Roots, and Completing the Square. You must use each method at least once.

1. $3x^2 + 75 - x^2 = 7$

2. $x^2 + 14x + 61 = 0$

3. $x^2 + 4x = 96$

4. $2x^2 + 24 = 8x$

Bellwork Alg 2 Friday, October 12, 2018

ANSWERS

Find all EXACT COMPLEX solutions to each quadratic using these methods: Factoring, Square Roots, and Completing the Square. You must use each method at least once.

1. $3x^2 + 75 - x^2 = 7$ Sq. Roots

$2x^2 + 75 = 7$

$-75 \quad -75$

$\frac{2x^2}{2} = \frac{-68}{2}$

$\sqrt{x^2} = \sqrt{-34}$

$x = \pm i\sqrt{34}$

2. $x^2 + 14x + 61 = 0$ Compl. Sq.

$-61 \quad -61$

$x^2 + 14x + 49 = -61 + 49$

$(x+7)^2$

$\sqrt{(x+7)^2} = \sqrt{-12} \rightarrow 4.3$

$x + 7 = \pm 2i\sqrt{3}$

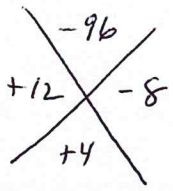
$-7 \quad -7$

$x = -7 \pm 2i\sqrt{3}$

3. $x^2 + 4x = 96$ FACTOR

$-96 \quad -96$

$x^2 + 4x - 96 = 0$



$(x+12)(x-8) = 0$

$x = -12, 8$

4. $\frac{2x^2}{2} + \frac{24}{2} = \frac{8x}{2}$ Compl. Sq

$x^2 + 12 = 4x$

$-4x \quad -4x$

$x^2 - 4x + 12 = 0$

$-12 \quad -12$

$x^2 - 4x + 4 = -12 + 4$

$(x-2)^2$

$\sqrt{(x-2)^2} = \sqrt{-8}$

$x - 2 = \pm 2i\sqrt{2}$

$+2 \quad +2$

$x = 2 \pm 2i\sqrt{2}$