Algebra 2 Bellwork Wednesday, December 3, 2015

1. Write this equation in Vertex Form: $y = x^2 - 16x + 13$

Find the exact solutions to each by completing the square.

2. $x^2 + 14x - 11 = 0$

3. $x^2 - 7x + 32 = 0$

4. $2x^2 + 48x + 88 = 0$

Algebra 2 Bellwork Wednesday, December 3, 2015 Answers

1. Write this equation in Vertex Form: $y = x^2 - 16x + 13$

$y = x^2 - 16x + 13$
$-13 \qquad -13$
$y - 13 + 64 = x^2 - 16x + 64$

$y + 51 = (x-8)^2$
$-51 \qquad -51$

$\rightarrow$ $y = (x-8)^2 - 51$

Find the exact solutions to each by completing the square.

2. $x^2 + 14x - 11 = 0$
$+11 \quad +11$

$x^2 + 14x + 49 = 11 + 49$

$\sqrt{(x+7)^2} = \sqrt{60}$ (4·15)

$x + 7 = \pm 2\sqrt{15}$
$-7 \qquad -7$

$x = -7 \pm 2\sqrt{15}$

3. $x^2 - 7x + 32 = 0$
$-32 \quad -32$

$x^2 - 7x + \frac{49}{4} = -32 + \frac{49}{4}$

$\sqrt{(x - \frac{7}{2})^2} = \sqrt{-19.75}$

NO REAL SOL

4. $2x^2 + 48x + 88 = 0$
$-88 \quad -88$

$\frac{2x^2 + 48x}{2} = \frac{-88}{2}$

$x^2 + 24x + 144 = -44 + 144$

$\sqrt{(x+12)^2} = \sqrt{100}$

$x = -22, -2$