Algebra 2 Bellwork Monday, December 7, 2015

Find all Real and Imaginary solutions to each Quadratic Equation. Round Real Solutions to the nearest hundredth and simplify all Imaginary Solutions.

1. $6x^2 - 7x = 11$

2. $8x^2 + 143 = 17$

3. $x^2 - 12x + 52 = 0$

4. $x^2 - 8x - 48 = 0$

5. $5(x-7)^2 + 59 = 4$

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Answers

Find all Real and Imaginary solutions to each Quadratic Equation. Round Real Solutions to the nearest hundredth and simplify all Imaginary Solutions.

1. $6x^2 - 7x = 11$ Quad Formula

$6x^2 - 7x - 11 = 0$

$b^2 - 4ac = 313$

$x = \frac{7 \pm \sqrt{313}}{12}$

$x = 2.06, -0.89$

2. $8x^2 + 143 = 17$ Sq Roots

$-143 \quad -143$

$\frac{8x^2}{8} = \frac{-126}{8} = \frac{-63}{4}$

$x = \pm\sqrt{\frac{-63}{4}} = \frac{\pm 3i\sqrt{7}}{2}$

3. $x^2 - 12x + 52 = 0$ Quad Form or Complete the Sq

52 / -12

$x^2 - 12x + 36 = -52 + 36$

$\sqrt{(x-6)^2} = \sqrt{-16}$

$x - 6 = \pm 4i$

$x = 6 \pm 4i$

4. $x^2 - 8x - 48 = 0$ Factor

$(x-12)(x+4) = 0$

-48 / -12, 4 / -8

$x = -4, 12$

5. $5(x-7)^2 + 59 = 4$ Sq Roots

$-59 \quad -59$

$\frac{5(x-7)^2}{5} = \frac{-55}{5}$

$\sqrt{(x-7)^2} = \sqrt{-11}$

$x - 7 = \pm i\sqrt{11}$

$x = 7 \pm i\sqrt{11}$