Steps to Solve a Quadratic Equation Containing a Complex Solution
1. W.O.P
2. The square root of a negative number should be replaced by i and the square root of a positive number. For example, $\sqrt{-23}$ becomes $i\sqrt{23}$.
3. Continue to simplify square root and fraction from previous steps.
4. Final simplification should have a number $\pm$ and a number with i or just $\pm$ and a number with i, such as,

$$x = 3 \pm 7i \text{ or something like } x = \pm i\sqrt{11}.$$

Example: Solve $7x^2 - 2x + 4 = 0$.

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Solution	Notes:
$7x^2 - 2x + 4 = 0$	Write the original problem
Evaluate $x = \dfrac{-b \pm \sqrt{b^2 - 4ac}}{2a}$ for $a = 7,\ b = -2,\ c = 4$	Set up quadratic formula.
$x = \dfrac{-(-2) \pm \sqrt{(-2)^2 - 4(7)(4)}}{2(7)}$	Substitute values.
$x = \dfrac{2 \pm \sqrt{4 - 28(4)}}{14}$	Simplify under $\sqrt{}$ and simplify the fraction.
$x = \dfrac{2 \pm \sqrt{4 - 112}}{14}$	
$x = \dfrac{2 \pm \sqrt{-108}}{14}$	There is a square root of a negative number so change to an expression containing i.
$x = \dfrac{2 \pm i\sqrt{108}}{14}$	
$x = \dfrac{2 \pm i\sqrt{(36)(3)}}{14}$	Finish simplification of square root.
$x = \dfrac{2 \pm i\sqrt{36}\sqrt{3}}{14}$	
$x = \dfrac{2 \pm i(6)\sqrt{3}}{14}$	
$x = \dfrac{2 \pm 6i\sqrt{3}}{14}$	We notice all the numbers outside of the $\sqrt{}$ have a common factor of two so we split up fraction to do more simplification and then put fraction back together.
$x = \dfrac{2}{14} \pm \dfrac{6i\sqrt{3}}{14}$	
$x = \dfrac{(\cancel{2})(1)}{(\cancel{2})(7)} \pm \dfrac{(\cancel{2})(3)i\sqrt{3}}{(\cancel{2})(7)}$	
$x = \dfrac{1}{7} \pm \dfrac{3i\sqrt{3}}{7}$	
$x = \dfrac{1 \pm 3i\sqrt{3}}{7}$	
$x = \dfrac{1}{7} \pm \dfrac{3i\sqrt{3}}{7}$	We split off the real part and the imaginary part.
$x = \dfrac{1}{7} \pm \dfrac{3}{7}i\sqrt{3}$	Final simplification should have a number $\pm$ a number with i.

The solution set is $\left\{ \dfrac{1}{7} \pm \dfrac{3}{7} i\sqrt{3} \right\}$.

The solution set can also be written as $\left\{ \dfrac{1}{7} + \dfrac{3}{7} i\sqrt{3}, \ \dfrac{1}{7} - \dfrac{3}{7} i\sqrt{3} \right\}$.