**4.3: Solving quadratic equations by completing the square**

**Objective:**

* Solve quadratics by completing the square

Sometimes factoring quadratic equations is not practical. We can use the method of **completing the square** from Chapter 3 to help us find the zeros and roots.

Ex. 1: Solve  and check your solutions(s).



Ex. 2: Solve  by completing the square. Express your answers to the nearest tenth.



Solving quadratic equations by completing the square:

1. Set the equation equal to zero and complete the square (follow the steps in section 3.3).
2. Isolate the squared term.
3. Take the positive and negative square root.
4. Solve the 2 corresponding equations for x.

Ex. 3: A wide-screened television has a diagonal measure of 42 in. The width of the screen is 16 in. more than the height. Determine the dimensions of the screen to the nearest tenth of an inch.



An **extraneous root** is a solution that does not satisfy any initial restrictions. This often happens in word problems, since we usually need positive solutions.

