By the Zero Product Law, we can state 3x + 7 = 0 and x-1 = 0.

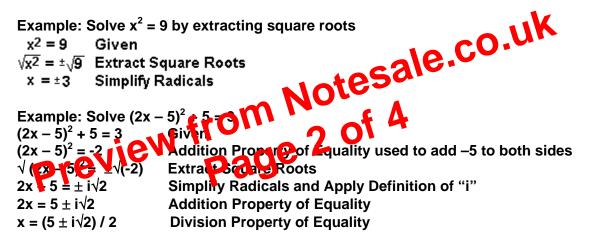
Solve these two equations by using the Addition Property of Equality and the Division Property of Equality.

 $3x + 7 = 0 \rightarrow 3x = -7 \rightarrow \frac{x = -7/3}{x = -1}$ x - 1 = 0 $\rightarrow \frac{x = 1}{x = 1}$

Solving Quadratic Equations – Method 2 – Extracting Square Roots

Extracting square roots is a very easy way to solve quadratics, provided the equation is in the correct form.

Basically, Extracting Square Roots allows you to rewrite $x^2 = k$ as $x = \pm \sqrt{k}$, where k is some real number. Algebraically, we are taking square roots of both sides of the equation as shown below and inserting the \pm to account for both a positive and negative case. Note that the squared quantity must be isolated on one side of = before you can extract the square roots.



Solving Quadratic Equations – Method 3 – Completing The Square

This method of solving quadratic equations is straightforward, but requires a specific sequence of steps. Here is the procedure:

Example: Solve $3x^2 + 4x - 7 = 0$ By Completing The Square

- 1. Isolate the x^2 and x-terms on one side of = by applying the Addition Property of Equality. $3x^2 + 4x = 7$
- 2. Apply the Division Property of Equality to divide all terms on both sides by the coefficient on x².
 (3x²)/3 + (4x)/3 = 7/3 x² + (4/3)x = 7/3 Note: Steps 1 and 2 may be done in either order.