Solving Quadratic Equation by Completing the Square:

ALWAYS REMEMBER the standard form of a Quadratic Equation is **Ax2 + Bx + C = 0.**

1. 5p2 + 2p – 9 = 0

First **ALWAYS make your A=1**. In this case, you need to DIVIDE the whole equation by 5.

So, we can have:

(5p2 + 2p – 9)/5 = 0/5

p2 + 2/5 p – 9/5 = 0

p2 + 2/5 p = 9/5

**Next get (B/2)2** and ADD it to the terms on the LEFT and RIGHT side of the equation.

(B/2)2  = {(2/5)(1/2)}2

= (1/5)2

**(B/2)2 = 1/25**

p2 + 2/5 p + 1/25 = 9/5 + 1/25

This time we have completed the square (the Left side of the equation is a perfect square; it can be factored completely)

And we will have:

(p + 1/5)2  = (45+1)/25

(p + 1/5)2  = 46/25

Then take the square root of both sides of the equation for us to get the roots. We have:

p +1/ 5 = √(46/25)

p + 1/5 = (√46)/5

p = +/- (√46)/5 - 1/5

So you now have the roots that will satisfy your equation:

P1 = (√46)/5 - 1/5 p2 = - (√46)/5 - 1/5

**P1 = {(√46)-1} / 5** **p2 = - {(√46)-1} / 5**