# Program Report of Quadratic Equation Solver

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Process

The roots of the Quadratic equation are -b+-√(b^2-4ac)/2a, so just put the formula in the program where I want to output the root and I will get the right answer.

The way I produce pretty printing of the quadratic equation is to determinate the relationship between the input integer and 0, For a, if a≠0,1,-1 then we can just print the original number of a, if a=1 then we can’t print “1X”,so in my program when a=1 the output will be “X” and also when a=-1, we can’t print “-1X”, so the output will be -X, For b, there’s 3 conditions, b=0, b>0, b<0, when b=0, there will not be any output, when b>0, the output is “ +’b’X ”, when b<0, the output is “ -‘-b’X ” so the unnecessary “-“will be gone, and the c is the same as b.

I produce the pretty printing format of the solution part by changing the formula a little bit. For discriminant > 0, the original solution is “-b + sqrt(discriminant)) / (2.0 \* a)” and “-b - sqrt(discriminant)) / (2.0 \* a)”, when a>0 the denominator is positive so the output roots will be pretty printed, but when a<0 the denominator will be negative, so when 1 root = 0, the output will be -0.0000 and it’s not pretty printed, therefore I changed the formula, when a<0, the solution will be (b - sqrt(discriminant)) / -(2.0 \* a) and (b + sqrt(discriminant)) / -(2.0 \* a) so the negative sign will be gone since the denominator is the product of 2 negative number which is positive. For discriminant = 0, I use the same method to make sure the output follows the pretty printing format. Last, for discriminant < 0, when the real number part = 0, I make it not to print the real number part to make sure it follows the pretty printing format.