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In order to fulfill the required function, I separated and coded the program into 3 parts.

First of all, I made the program print the text required, get the integer value wanted, and avoid invalid inputs like char, string, or anything not integer.

Second, I dealt with the output of the equation. I used the quadratic discriminant D to determine and print the corresponding sentence.

Next, use conditional expressions to determine and print the equation. If the coefficients of X^2 and X are equal to 1 or -1, print out a positive or negative sign separately. Also, if the coefficient of X^2 is positive, then there shouldn't be any sign, including 1. But if the coefficient is equal to 0 or else, then print out nothing or a signed number separately.

Finally, I compute x_1 and x_2 , which are denoted by $-b/(2*a)$ and $\sqrt{\text{fabs}(D)}/(2*a)$. Use the value of quadratic discriminant D again to determine and print the corresponding sentence as required by combining them in different ways according to the value of variable D .