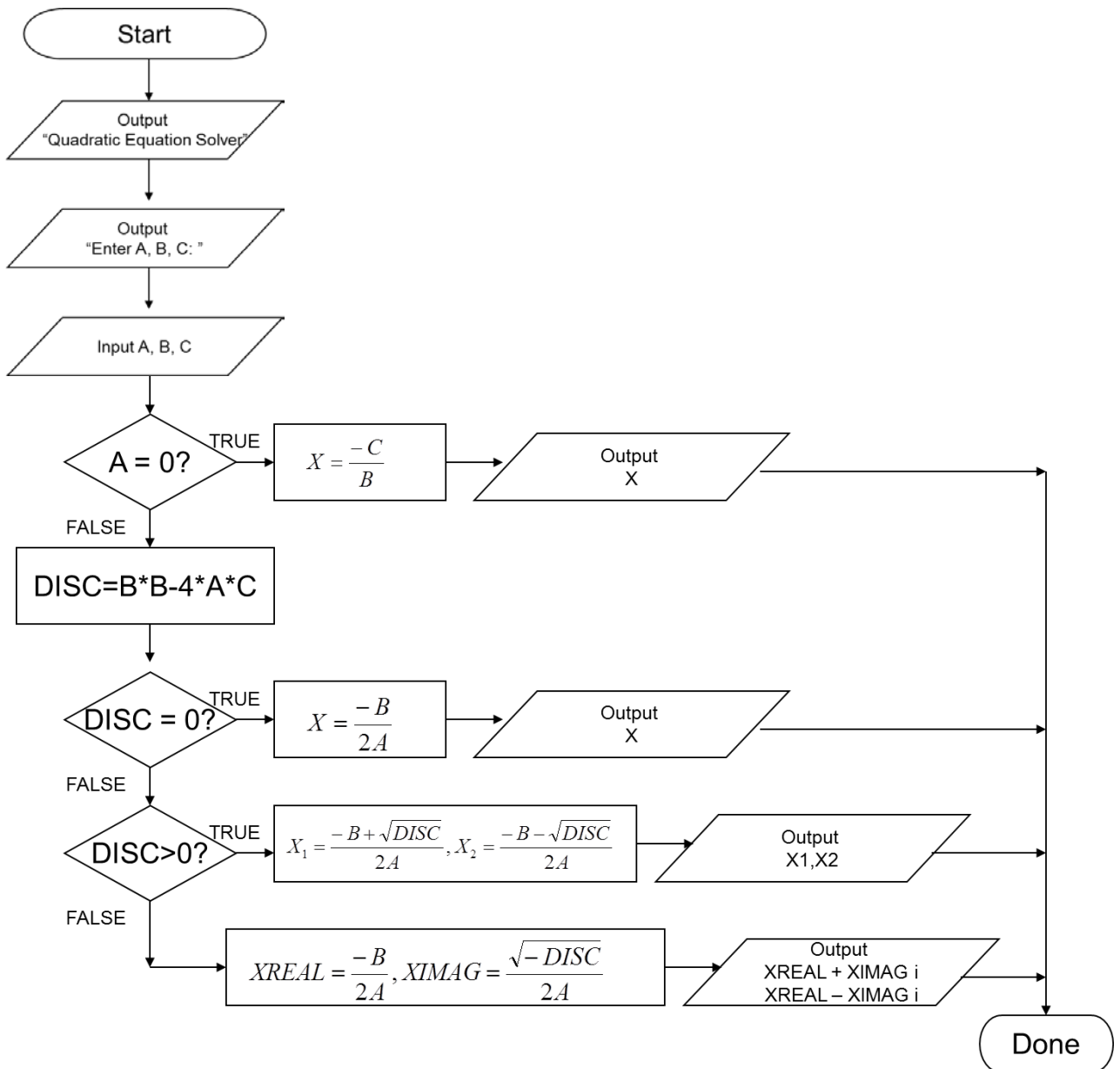


# 16.216: ECE Application Programming

Spring 2012

Lecture 12: PE2  
February 17, 2012

In today's exercise, you will convert the following flowchart into a working program:



Guidelines:

- A, B, and C (the coefficients of  $Ax^2 + Bx + C$ ) can be any real number.
- All roots should be printed with 2 places after the decimal point.
- To implement the square root function, you need to include the math library (`<math.h>`) and use the function `sqrt( )`. The statement:

```
x = sqrt(y);
```

will evaluate the square root of `y` and assign that value to `x`. For example, if  
`y == 9`, `x == 3`; if `y == 10`, `x == 3.162277`

**Questions**

1. What variables do you need? What types are they, and what should you name them?

2. How do we implement the initial I/O?

3. How would you organize the conditional statements in this program? In particular:
  - What condition(s) are you testing?
  - Does each if statement need an else case? One or more “else if” cases?
4. What goes inside each if or else block? (Suggestion: answer question 3 first, but leave yourself space to fill in the contents of each block if you’re handwriting your code.)