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Thread: [Help making quadratic formula in python](#)

The Pact - July 13, 2017, 3:41 am

Help making quadratic formula in python

I am trying to make a program in which you enter the A, B, and C variables in the quadratic formula and it find's X's two values. I already set up an if-else statement so that if the discriminant is negative, it will tell the user there are no solutions, however I am having trouble on the actual math part.

The quadratic formula is $x = \frac{-b \pm \sqrt{b^2 - 4ac}}{2a}$ all divided by 2a.

Part of my code is below. As you can see in the else statement, I set up two variables because X can have two different answers because there is the plus-minus sign. Would the way I did it be the correct way to do it? When I try to test it out, it gives the wrong answers so my math is wrong somehow.

Code:

```
#Makes a variable for the discriminant
disc = b2 - 4*a*c

#If the discriminant is less than 0, it says no real solutions
if disc < 0:
    print "No real solutions"

#If the discriminant is 0, it finds the 1 value of X
elif disc == 0:
    x = -b+((b2 - 4*a*c)**.5)/2*a
    print "x = " + str(x)
```

Davian - July 13, 2017, 4:12 am

PHP Code

```
<?php
import math
def quadratic(a, b, c):
    xs = [0,0]
    xs[0] = (-b - math.sqrt(b**2 - 4*(a*c)))/(a*2)
    xs[1] = (-b + math.sqrt(b**2 - 4*(a*c)))/(a*2)
    return xs
```

jesuscakes - July 13, 2017, 6:12 am

(Jul 13, 2017 04:12 AM)davian Wrote: [\[CITE\]](#) PHP Code

```
<?php
import math
def quadratic(a, b, c):
    xs = [0,0]
    xs[0] = (-b - math.sqrt(b**2 - 4*(a*c)))/(a*2)
```

```
xs[1] = (-b + math.sqrt(b**2 - 4*(a*c)))/(a*2)
return xs
```

This is the best way to do it. You could also use `cmath` instead if you wanted to be able to handle complex numbers.

Goodies - July 13, 2017, 4:35 pm

You may want to use `cmath` here, not the `math` module, because of course the quadratic formula can have imaginary numbers. Adding an "imaginary" boolean parameter would be one solution here.

PHP Code

```
<?php
from __future__ import print_function
import cmath
import math
import operator

def quadratic(a, b, c, imaginary=True):
    sqrt = cmath.sqrt if imaginary else math.sqrt
    def _quad(op):
        try:
            return op(-b, sqrt(b**2 - 4*a*c))/(2*a)
        except ValueError:
            return None
    return _quad(operator.add), _quad(operator.sub)

# define a, b, c
x, y = quadratic(a, b, c) # or quadratic(a, b, c, False) for real values only
print(x, y)
```