

Forum:[Hack Forums](#)

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

Gerymc - July 2, 2017, 1:12 pm

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 = b**2 - 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+((b**2 - 4*a*c)**.5)/2*a
```

```
    print "x = " + str(x)
```

```
else:
```

```
    x1 = -b+((b**2 - 4*a*c)**.5)/2*a
```

```
    x2 = -b-((b**2 - 4*a*c)**.5)/2*a
```

```
    print "x = " + str(x1) + str(x2)
```

EDIT: Realized that I need to make the formula like this:

```
Code (-b+((b**2 - 4*a*c)**.5))/2*a
```

slober - July 2, 2017, 1:37 pm

You can write it a bit shorter if you wanted to.

ex.

Code import cmath

```
delta = (b**2) - (4*a*c)
```

```
solution1 = (-b-cmath.sqrt(delta))/(2*a)
```

```
solution2 = (-b+cmath.sqrt(delta))/(2*a)
```

Gerymc - July 2, 2017, 1:41 pm

(Jul 2, 2017 01:37 PM)slober Wrote: [\[CITE\]](#) You can write it a bit shorter if you wanted to.

ex.

Code import cmath

```
delta = (b**2) - (4*a*c)
```

```
solution1 = (-b-cmath.sqrt(delta))/(2*a)
solution2 = (-b+cmath.sqrt(delta))/(2*a)
```

I'm doing this for a class and they didn't teach us that yet, so I can't use it.

slober - July 2, 2017, 1:54 pm

(Jul 2, 2017 01:41 PM)jdugerymc Wrote: [\[CITE\]](#) I'm doing this for a class and they didn't teach us that yet, so I can't use it.

This would be my full solution

Code import cmath

```
print('Solve the quadratic equation: ax**2 + bx + c = 0')
a = float(input('Please enter a : '))
b = float(input('Please enter b : '))
c = float(input('Please enter c : '))
delta = (b**2) - (4*a*c)
```

```
if delta < 0:
    print ("No real solutions")
elif delta == 0:
    solution1 = (-b+cmath.sqrt(delta))/(2*a)
    print ('x =',solution1)
else:
    solution1 = (-b-cmath.sqrt(delta))/(2*a)
    solution2 = (-b+cmath.sqrt(delta))/(2*a)
```

```
    print ('x =',solution1)
    print('x =',solution2)
```

or

Code print ('x1 = {0} and x2 {1}'.format(solution1,solution2))What kind of class are you following?

Gerymc - July 2, 2017, 1:59 pm

(Jul 2, 2017 01:54 PM)slober Wrote: [\[CITE\]](#) This would be my full solution

Code import cmath

```
print('Solve the quadratic equation: ax**2 + bx + c = 0')
a = float(input('Please enter a : '))
b = float(input('Please enter b : '))
c = float(input('Please enter c : '))
delta = (b**2) - (4*a*c)
```

```
if delta < 0:
    print ("No real solutions")
elif delta == 0:
    solution1 = (-b+cmath.sqrt(delta))/(2*a)
    print ('x =',solution1)
else:
    solution1 = (-b-cmath.sqrt(delta))/(2*a)
    solution2 = (-b+cmath.sqrt(delta))/(2*a)
```

```
    print ('x =',solution1)
    print('x =',solution2)
```

What kind of class are you following?

It is just a summer class "Computational Thinking Part 1" I believe. It is a prerequisite for other

computer science classes.

But I already fixed it, thanks for the help though. I forgot to add some parentheses.

arkoydas - *July 3, 2017, 9:08 am*

Is there any way to do it fast with list comprehension?