Class_Complex

Student must create a class named **Complex** that function as a complex number **a+bi** when **a** is the real part and **b** is the imaginary part. In this question, you have to write **Complex** class that has a structure as shown below

Structure of class **Complex**	Example used of class **Complex**

`class Complex :`
`  def __init__(self,a,b):`
 	
`  def __str__(self):`
 	
`  def __add__(self, rhs):`
 	
`  def __mul__(self, rhs):`
 	
`  def __truediv__(self, rhs):`
	`a = Complex(3,4)`
	`b = Complex(5,6)`
	`c = Complex(3,1)`
	`d = Complex(2,1)`
	
	`print( str(a) ) #  equal to 3+4i`
	`print( a+b )  #  equal to 8+10i`
	`print( a*b )  #  equal to -9+38i`
	`print( b*a )  #  equal to -9+38i`
	`print( c/d )  #  equal to 1.4-0.2i`

Method **__str__** is quite complex because this question require outputs to be as accurate as possible, such as **print(Complex(2,0))** must show as 2, not 2+0i. Or need to show output as 2-i, not 2-1i. You can look at different cases on the next page example.

Method **__add__** is used when we call + operator between 2 **Complex**, new Complex that is their sum.

Method **__mul__** is used when we call * operator between 2 **Complex**, An output is a new Complex that is their multiplication $(a+bi)*(c+di)=(ac-bd)+(ad+bc)i$

Method **__truediv__** is used when we call / operator between 2 **Complex**, An output is a new Complex that is their division

$$\frac{a+bi}{c+di}=\frac{(a+bi)(c-di)}{(c+di)(c-di)}=\frac{(ac+bd)+(-ad+bc)i}{c^2+d^2}=\frac{ac+bd}{c^2+d^2}+\frac{-ad+bc}{c^2+d^2}i$$

Grader Submission

Put these lines of codes below after **class Complex** as shown above before submit to grader for checking

```
t, a, b, c, d = [int(x) for x in input().split()]
c1 = Complex(a,b)
c2 = Complex(c,d)
if t == 1     : print(c1)
elif t == 2   : print(c2)
elif t == 3   : print(c1+c2)
elif t == 4   : print(c1*c2)
else          : print(c1/c2)
```

Input

5 integers, separate by space (As shown in example and a program that use for grader submission)

Output

Return output from program above that rely on class **Complex** that you write

Example

Input (from keyboard)	Output (on screen)
`1 3 4 5 6`	`3+4i`
`2 3 4 5 6`	`5+6i`
`1 0 3 3 0`	`3i`
`2 0 3 3 0`	`3`
`1 -3 3 3 -3`	`-3+3i`
`2 -3 3 3 -3`	`3-3i`
`1 -3 -3 0 -3`	`-3-3i`
`2 -3 -3 0 -3`	`-3i`
`1 3 1 3 1`	`3+i`
`1 3 -1 3 1`	`3-i`
`1 0 1 0 -1`	`i`
`2 0 1 0 -1`	`-i`
`3 3 4 5 6`	`8+10i`
`4 3 1 2 1`	`5+5i`
`5 3 1 2 1`	`1.4-0.2i`