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Assignment(1-2)

Program 1

```
a=int(input("Enter a number "))
b=int(input("Enter a number "))

#Mathematical Operators

pdt=a*b
diff=a-b
sum=a+b
div=a/b

print("Sum is ",sum)
print("Difference is ",diff)
print("Product is ",pdt)
print("Quotient is ",div)

#Logical Operators

if a>0 and b>0:
    print("The numbers are greater than 0")
elif ((a>0 and b<0) or (a<0 and b>0)):
    print("Atleast one number is  greater than 0")
else:
    print("Neither of numbers is greater than zero")

#Bitwise Operators

print("Bitwise and of 2 numbers is ",a&b)
print("Bitwise or of 2 numbers is ",a|b)
print("Bitwise xor of 2 numbers is ",a^b)
```

Output of Program 1

Enter a number 10
Enter a number 5
Sum is 15
Difference is 5

Product is 50
Quotient is 2.0
The numbers are greater than 0
Bitwise and of 2 numbers is 0
Bitwise or of 2 numbers is 15
Bitwise xor of 2 numbers is 15

Program 2

```
import cmath
a=int(input("Enter a number "))
b=int(input("Enter a number "))
c=int(input("Enter a number "))
dis = (b**2) - (4*a*c)
a1 = (-b-cmath.sqrt(dis))/(2 * a)
a2 = (-b+cmath.sqrt(dis))/(2 * a)
print('The roots are')
print(a1)
print(a2)
```

Output of program 2

Enter a number 1
Enter a number -2
Enter a number 1
The roots are
(1+0j)
(1+0j)

Program 3

```
x=int(input("Enter real part of 1st number "))
y=int(input("Enter imaginary part of 1st number "))
z=complex(x,y)
a=int(input("Enter real part of 2nd number "))
b=int(input("Enter imaginary part of 2nd number "))
c=complex(a,b)
print("The 2 numbers are")
print(z)
print(c)
d=z+c
e=z-c
f=z*c
g=z/c
print("Sum is ",end="")
print(d)
```

```
print("Difference is ",end="")
print(e)
print("Product is ",end="")
print(f)
print("Division is ",end="")
print(g)
```

Output of Program 3

Enter real part of 1st number
5
Enter imaginary part of 1st number 10
Enter real part of 2nd number
2
Enter imaginary part of 2nd number 3
The 2 numbers are
(5+10j)
(2+3j)
Sum is (7+13j)
Difference is (3+7j)
Product is (-20+35j)
Division is (3.0769230769230766+0.3846153846153845j)