```python
#1. Python Program to Calculate the Area of a Triangle
a = float(input('Enter first side: '))
b = float(input('Enter second side: '))
c = float(input('Enter third side: '))
s = (a + b + c) / 2
area = (s*(s-a)*(s-b)*(s-c)) ** 0.5
print('The area of the triangle is %0.2f' %area)
```

```
Enter first side: 9
Enter second side: 5
Enter third side: 6
The area of the triangle is 14.14
```

```python
#2Python Program to Swap Two Variables
x = float(input('Enter value of X: '))
y = float(input('Enter value of Y: '))
temp = x
x = y
y = temp

print("Value of x:", x)
print("Value of y:", y)
```

```
Enter value of X: 12
Enter value of Y: 16
Value of x: 16.0
Value of y: 12.0
```

```python
#.3 Python Program to Generate a Random Number
import random
n = random.randint(0,50)
print(n)
```

```
50
```

set B

```python
#1.Write a Python Program to Check if a Number is Positive, Negative
or Zero
num = float(input("Enter a number: "))
if num >= 0:
   if num == 0:
       print("Zero")
   else:
       print("Positive number")
else:
   print("Negative number")
```

```
Enter a number: 12
Positive number
```

```python
#2.Write a Python Program to Check if a Number is Odd or Even

num = int(input("Enter a number: "))
if (num % 2) == 0:
   print("{0} is Even".format(num))
else:
   print("{0} is Odd".format(num))
```

```
Enter a number: 14
14 is Even
```

```python
#3.Write a Python Program to Check Prime Number
num = int(input("Enter a number: "))
flag = False
if num > 1:
    for i in range(2, num):
        if (num % i) == 0:
            flag = True
            break
if flag:
 print(num, "is not a prime number")
else:
 print(num, "is a prime number")
```

```
Enter a number: 7
7 is a prime number
```

```python
#4.Write a Python Program to Check Armstrong Number
num = int(input("Enter a number: "))
sum = 0
temp = num
while temp > 0:
   digit = temp % 10
   sum += digit ** 3
   temp //= 10
if num == sum:
   print(num,"is an Armstrong number")
else:
   print(num,"is not an Armstrong number")
```

```
Enter a number: 7
7 is not an Armstrong number
```

```python
#5.Write a Python Program to Find the Factorial of a Number
num = int(input("Enter a number: "))

factorial = 1
if num < 0:
   print("Sorry, factorial does not exist for negative numbers")
elif num == 0:
   print("The factorial of 0 is 1")
```

```
else:
   for i in range(1,num + 1):
       factorial = factorial*i
   print("The factorial of",num,"is",factorial)
```

```
Enter a number: 15
The factorial of 15 is 1307674368000
```