In [2]:
```python
#1.1 Write a Python Program(with class concepts) to find the area of the trian
gle using the below formula.
#area = (s*(s-a)*(s-b)*(s-c)) ** 0.5
#Function to take the length of the sides of triangle from user should be defi
ned in the parent
#class and function to calculate the area should be defined in subclass.

class Shape:
    def __init__(self, a,b,c):
        self.a = a
        self.b = b
        self.c = c
        self.sides=[]
    def setsides(self):
        self.sides = [self.a,self.b,self.c]
        return self.sides
class Triangle(Shape):
    def __init__(self,a,b,c):
        Shape.__init__(self,a,b,c)
        super(Triangle,self).__init__(a,b,c)
    def findArea(self):
        # calculate the semi-perimeter
        s = (self.a+self.b+self.c)/2
        area = (s*(s-self.a)*(s-self.b)*(s-self.c)) ** 0.5
        try:
            print('The area of the triangle is %0.2f' %area)
        except:
                print('Incorrect entry - Not a Triangle when one side is bigge
r than the other two combined')

t = Triangle(1,11,2)
t.findArea()
```

Incorrect entry - Not a Triangle when one side is bigger than the other two c
ombined

In [4]:
```python
t = Triangle(4,5,6)
t.findArea()
```

The area of the triangle is 9.92

In [56]:
```python
#1.2 Write a function filter_long_words() that takes a list of words and an in
teger n and returns
#the list of words that are longer than n.

def wordlen(list):
    print('Type an integer')
    num=int(input())
    print('Words greater than integer:')
    for n in list:
        if (len(n))>num:
            print(n)

list=['tiger','lion','cheetah']
wordlen(list)
```

```
Type an integer
4
Words greater than integer:
tiger
cheetah
```

In [5]:
```python
# 2.1 Write a Python program using function concept that maps list of words in
to a list of integers
# representing the lengths of the corresponding words .
def cntltrs():
    print('Type words seperated by comma')
    list=[]
    length=[]
    words=input()
    list.append(words.split(','))
    for l in list:
        for i in l:
            length.append(len(i))
        print(length)

cntltrs()
```

```
Type words seperated by comma
Acer,Hp,Lennovo,Nexus,Dell
[4, 2, 7, 5, 4]
```

In [6]:
```python
# 2.2 Write a Python function which takes a character (i.e. a string of length
 1) and returns True if
# it is a vowel, False otherwise.

def identifyletter():
    print('Please type a letter')
    string=input()
    vowels='a','e','i','o','u'
    print("Is this letter a vowel?")
    for v in vowels:
        if v==string:
            print(True)
            break
    else:
        print(False)

identifyletter()
```

```
Please type a letter
q
Is this letter a vowel?
False
```

In [7]:
```python
identifyletter()
```

```
Please type a letter
a
Is this letter a vowel?
True
```