1.1 Write a Python Program(with class concepts) to find the area of the triangle 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 defined in the parent class and function to calculate the area should be defined in subclass.

In [1]:
```
class Parameter:
    def __init__(self, side1, side2, side3):
        self.side1 = side1
        self.side2 = side2
        self.side3 = side3

class Area(Parameter):

    def __init__(self,*args, **kwargs):
        super(Area, self).__init__(*args, **kwargs)
        #self._student_id = student_id

    def area(self):
        print(self.side1)
        print(self.side2)
        print(self.side3)
        half_of_peremeter = (self.side1 + self.side2 + self.side3)/2 # calculatin
        if (half_of_peremeter<=self.side1 or half_of_peremeter<=self.side2 or hal
            return ("Not valid sides of triangle")
        else :
            return (half_of_peremeter*(half_of_peremeter-self.side1)*(half_of_per


cal_area = Area(2,3,4)
print(cal_area.area())
```

```
2
3
4
2.9047375096555625
```

1.2 Write a function filter_long_words() that takes a list of words and an integer n and returns the list of words that are longer than n.

In [2]:
```
def filter_long_words(list, n):
    list1 =[]
    for x in list:
        if (len(x)>n):
            list1.append(x)
    return list1

list = ['ACADGLID', 'Prashant', 'some', 'true', 'helping']

print(filter_long_words(list, 5))
```

```
['ACADGLID', 'Prashant', 'helping']
```

2.1 Write a Python program using function concept that maps list of words into a list of integers representing the lengths of the corresponding words .

In [3]:
```
class LengthOfWord():

    def __init__(self,list):
        self.list=list


    def lengthOfWord(self):
        dict = {}
        list = []
        for x in self.list :
            dict[x] = len(x)
            list.append(len(x))
        return dict, list


list = ['ACADGLID', 'Prashant', 'some', 'true', 'helping']
lengthOfWord = LengthOfWord(list)
print(lengthOfWord.lengthOfWord())
```

```
({'ACADGLID': 8, 'Prashant': 8, 'some': 4, 'true': 4, 'helping': 7}, [8, 8, 4,
4, 7])
```

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.

In [9]:
```
class Vovel():


    def __init__(self,var):
        self.list=list

    def trueOrFalse(self):
        list1 = ['a','e','i','o','u' ]
        if(var in list1):
            return True
        else :
            return False



var = 'p'
vovel = Vovel(var)
print(vovel.trueOrFalse())
```

```
False
```