practice problem 2.1

In [1]:
```
# a)
sum=1+2+3+4+5
print (sum)
# b)
avg=(23+19+31)/3
print(avg)
# c)
t=403//73
print(t)
# d)
rem=403%3
print(rem)
# e)
exp=2**10
print(exp)
# f)
a=abs(54-57)
print(a)
# g)
MIN=min(34.99,29.95,31.50)
print(MIN)
```

```
15
24.333333333333332
5
1
1024
3
29.95
```

practice problem 2.2

In [1]:
```
#c)
print(3**2+4**2==25)

#d)
print(2+4+6>12)

#e)
print(1387%19==0)

#f)
print(31%2==0)

#g)
print(min(34.99,29.95,31.50)<30.00)

#a)
print(2+2<4)

#b)
print(7//3==1+1)
```

```
True
False
True
False
True
False
True
```

practice problem 2.3

In [2]:
```
#a)
a=3
print(a)
#b)
b=4
print(b)
#c)
c=a*a+b*b
print(c)
```

```
3
4
25
```

practice problem 2.4

In [3]:
```
s1='ant'
s2='bat'
s3='cod'
#(a)
print(s1 + ' ' + ' ' + s2 + ' ' +  '' + s3)
#(b)
print((s1 + ' ') *10)
#(c)
print(s1 +' ' + (s2 + ' ')*2 + (s3 + ' ')*3)
#(d)
print(s1 + ' ' + s2 + ' ' +' ' + s1 + ' ' + s2 + ' ' + s1 + ' ' + s2 + ' ' + s
1 + ' ' + s2 + ' ' + s1 + ' ' + s2 + ' ' + s1 + ' ' + s2 + ' ' + s1 + ' ' + s2
+ ' ' + s1 + ' ' + s2)
#(e)
print(s2 + s2 + s3 + ' ' + s2 + s2 + s3 + ' ' + s2 + s2 + s3 + ' ' + s2 + s2 +
s3 + ' ' + s2 + s2 + s3+ ' ' + s2 + s2 + s3)
```

```
ant  bat cod
ant ant ant ant ant ant ant ant ant ant
ant bat bat cod cod cod
ant bat  ant bat ant bat ant bat ant bat ant bat ant bat ant bat
batbatcod batbatcod batbatcod batbatcod batbatcod batbatcod
```

practice problem 2.5

In [6]:
```
s='0123456789'
#(a)
print(s[0])
#(b)
print(s[1])
#(c)
print(s[6])
#(d)
print(s[-2])
#(e)
print(s[-1])
```

```
0
1
6
8
9
```

practice problem 2.6

In [7]:
```
word=['bat','ball','barn','basket','badminton']
#(a)
print(word[0])
#(b)
print(word[4])
```

```
bat
badminton
```

practice problem 2.7

In [18]:
```
grades=[9,7,7,10,3,9,6,6,2]
#(a)
print(grades.count(7))
#(b)
grades[-1]=4
print(grades)
#(c)'
print(max(grades))
#(d)
grades.sort()
print(grades)
#(e)
SUM=(sum(grades))/len(grades)
print(SUM)
```

```
2
[9, 7, 7, 10, 3, 9, 6, 6, 4]
10
[3, 4, 6, 6, 7, 7, 9, 9, 10]
6.777777777777778
```

practice problem 2.8

In [ ]:
```
#(a)
((2+3)==a)or a>=5
#(b)
(((lst[1])*(-3))<(-10)) in [0,true]
#(c)
(((lst[1])*(-3))<(-10))==0
#(d)
2*(3**2)
#(e)
(4/2) in [1,2.3]
```

practice problem 2.9

In [8]:
```
#(a)
a=False + False
print(type(a))
#(b)
b=(2)*(3**2.0)
print(type(b))
#(c)
c=(4//2)+(4%2)
print(type(c))
#(d)
d=(2+3==4) or (5>=5)
print(type(d))
```

```
<class 'int'>
<class 'float'>
<class 'int'>
<class 'bool'>
```

practice problem 2.10

In [13]:
```
import math
#(a)
a=3
b=5
lenght=math.sqrt((a**2)+(b**2))
print(lenght)
#(b)
print(lenght==5)
#(c)
a=3
area=(math.pi*(a**2))
print(area)
#(d)
x=2
y=4
a=1
b=2
r=3
print(((x-a)**2+(y-b)**2)>r)
```

```
5.830951894845301
False
28.274333882308138
True
```