

**CS177 Spring 2015**  
**Midterm 1 - February 19, 8pm-9pm**

- There are 25 True/False and multiple choice questions. Each one is worth 4 points.
- Answer the questions on the bubble sheet given to you.
- Only the answers on the bubble sheet will be counted.
- The questions will be discarded.
- This exam contains 18 pages (including this cover page)

Remember to fill in the following bubble card fields:

- student ID: use the 10 digit ID number on your student ID card. **DO NOT USE YOUR SOCIAL SECURITY NUMBER!** If you forget to write your student ID in the bubble card, you may get a 0.
- Last Name and First Name
- Instructor: put your RECITATION INSTRUCTOR'S LAST NAME given in the table below
- Test/Quiz: put 01
- Course: 177
- Section number: find your recitation section in the table below and put in the bubble card the last column of the table below

Recitation section	Time	TA	Section number
R01	Thursday, 07:30 am-08:20 am	Rohit Bhatia	001
R02	Thursday, 09:30 am-10:20 am	Ruby Tahboub	002
R03	Friday, 07:30 am-08:20 am	Ajay M S	003
R04	Friday, 10:30 am-11:20 am	Haining Chen	004
R05	Friday, 12:30 pm-01:20 pm	Rohit Bhatia	005
R06	Friday, 02:30 pm-03:20 pm	Adib Rastegarnia	006
R07	Friday, 04:30 pm-05:20 pm	Sait Celebi	007

- Distance Learning Students

Section	Time	TA	Section number
Y01	Distance Learning	Wei Chuang	008

**Student Last Name:** \_\_\_\_\_

**Student First Name:** \_\_\_\_\_

1. What is the output of the following Python program?

```
x = list(range(7,1,-2))
print(x[-2])
```

- A. 1
- B. 2
- C. 3
- D. 5 ★**
- E. 7

2. What is the result of evaluating the following expression  $2 ** 4 + 9 / 3 * 2 - 2$  ?

- A. 2.166666666666667
- B. 14.666666666666668
- C. 20.0 ★**
- D. 36.0
- E. 256.0

3. What is the output of the following Python program?

```
def testFun(a,b,c):
    print(a+b+c)

testFun(11,12,'13')
```

- A. 36
- B. 2313
- C. '2313'
- D. 23+'13'
- E. TypeError ★**

4. What is the output of the following Python program?

```
def test ():  
    x = 7  
    if 10 < x :  
        print ( 'Alligator' )  
    else :  
        print ( 'Cat' )  
        if 2 > x :  
            print ( 'Dog' )  
        print ( 'Lion' )  
    print ( 'Tiger' )  
test ()
```

- A. Cat  
Tiger
- B. Alligator  
Tiger
- C. Cat  
Dog  
Lion  
Tiger
- D. Alligator
- E. Cat  
Lion  
Tiger ★**

5. What is the output of the following Python program?

```
def func(x, y):  
    y = y * 2  
    x = x + y  
    return x  
  
print(func('1', '2'))
```

- A. 5
- B. 23
- C. 14
- D. 122 ★**
- E. 211

6. What is the output of the following Python program?

```
def main():  
    s = "Python is cool"  
    myFunc(s)  
  
def myFunc(s):  
    for i in range(-1, -len(s), -1):  
        print(s[i], end=' ')  
  
main()
```

- A. Python is cool
- B. looc si nohtyp
- C. looc si nohty ★**
- D. cool is Python
- E. Error

7. What is the output of the following Python program?

```
def main():
    var1 = "Hello"
    for i in range(0,10):
        var1[i] = 'i'
    print(var1)

main()
```

- A. 0123456789
- B. 012345678910
- C. Hello01234
- D. Hello012345
- E. TypeError ★**

8. What is the output of the following Python program?

```
s1 = "spamandeggs"
x = s1.find('and')
print(x)
print(s1[0:1], s1[5:7])
```

- A. 5  
s nd
- B. 4  
s nd ★**
- C. 5  
sp nde
- D. 4  
sp nde
- E. 5  
s nde

9. What is the output of the following Python program?

```
def testFun(varB):  
    varB.append(9)  
    if 5 in varB:  
        varB = [11,12]  
    else:  
        varB.append(14)
```

```
varA = [5,6]  
testFun(varA)  
print(varA)
```

- A. [5,6]
- B. [5,6,9] ★**
- C. [11,12]
- D. [5,6,9,14]
- E. [9,14]

10. What is the output of the following Python program?

```
def getX(y):  
    if (y>0):  
        return 1  
    else:  
        return 0
```

```
z=getX(getX(getX(getX(1)-1)+1)-1)  
print(z)
```

- A. TypeError
- B. 0 ★**
- C. '0'
- D. 1
- E. '1'

11. Assume we have `mylib.py` as the following,

```
def sayHello():  
    print( 'Hello .. ' )
```

Which of the following Python program is a correct way to call `sayHello()` function from `mylib.py`?

- A. `import mylib`  
    `sayHello()`
- B. `import mylib as X`  
    `mylib.sayHello()`
- C. `from mylib import *`  
    `mylib.sayHello()`
- D. `from mylib import sayHello`  
    `mylib.sayHello()`
- E. `from mylib import sayHello`  
    `sayHello()` ★

12. What is the output of the following Python program?

```
myList = [ "Apple" , " Ball" , "Cat" ]  
myList.append("Dog")  
myList.reverse()  
myList[0] = [ "Dog" ,1]  
print(myList[0][ -1])
```

- A. Dog
- B. D
- C. 1 ★
- D. A
- E. Error



13. Which of the following function returns a sequence  $-2, -1, 0, 1, 2$  ?

- A. `list(range(-2, 2))`
- B. `list(range(-3, 3))`
- C. `list(range(-2, 3))` ★**
- D. `list(range(-3, 3, 2))`
- E. `list(range(-2, 3, 2))`

14. What is the output of the following Python program?

```
x = 6
y = 8
z = x + y // 5 * (x % 4)
print(z)
```

- A. 1
- B. 4
- C. 6
- D. 8 ★**
- E. 14

15. What is the output of the following Python program?

```
y = 0
x = 200
for i in range(20, 1, -3):
    y = y + i
    x = x - i
print(x, ", ", y)
```

- A. 77,123
- B. 123,77 ★**
- C. 120,80
- D. 80,120
- E. 100,100

16. What is the output of the following Python program?

```
a = True
b = False
if not a:
    result = True
elif not b:
    result = not(not b and not a)
else:
    result = False

print(result)
```

- A. True★**
- B. False

17. The following code will print the string “one banana”:

```
def myFunc (arg):  
    x = arg  
    x = arg + 10  
    if x > 20:  
        return "one apple"  
        print ("one banana")  
    else:  
        return "one banana"  
  
print (myFunc(20))
```

- A. True
- B. **False ★**

18. What is the output of the following python program?

```
myList = [ [1,2,3], [4,5], [7,8,9], [] ]  
for x in myList:  
    print(len(x))
```

- A. 3
- B. 4
- C. [1,2,3]
- D. 3  
2  
3
- E. 3  
2  
3  
**0 ★**

19. What is the output of the following Python program?

```
def Balance (money):  
    money = money - 10  
    if (money < 70):  
        print ("I 'm poor!")  
    else:  
        print ("I 'm rich!")  
  
def main ():  
    myMoney = 70  
    Balance (myMoney)  
    if (myMoney < 70):  
        print ("I 'm poor!")  
    else:  
        print ("I 'm rich!")
```

main()

- A. I'm rich!  
I'm poor!
- B. I'm poor!  
I'm rich! ★**
- C. I'm rich!  
I'm rich!
- D. I'm poor!  
I'm poor!
- E. I'm rich!

20. What is the output of the following Python program?

```
def utilityFunction(varA):
    sum=0
    count=0
    for i in varA:
        sum+=i
        count=count+1
    average = sum/count
    return sum, count , average

def getValues(n):
    x=[]
    for i in range(n):
        x.append(i)
    varB = utilityFunction(x)
    return varB
```

```
m,n,o = getValues(10)
print(m, "/", n, "=", o)
```

A.  $4.5/10=45$

B.  $50/10=5$

C.  $45/10=4.5$  ★

D.  $5/10=50$

E.  $45/9=5$

21. Assume we have the following Python program,

```
from graphics import *

win = GraphWin("My window", 500, 500)

win.setCoords(0, 0, 500, 500)

rect = Rectangle(Point(100,150), Point(450,350))
rect.draw(win)

win.getMouse()
win.close()
```

Which of the following circle will be COMPLETELY outside of the rectangle(rect)?

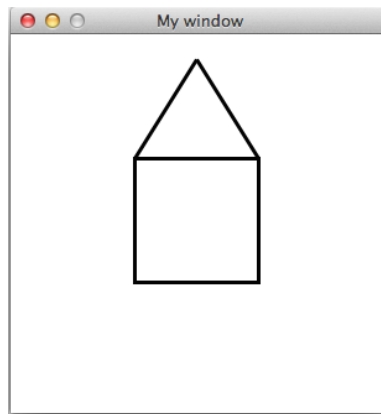
- A. **cir = Circle(Point(100,100), 20) ★**
- B. cir = Circle(Point(300,150), 50)
- C. cir = Circle(Point(190,190), 50)
- D. cir = Circle(Point(350,350), 50)
- E. cir = Circle(Point(150,150), 100)

22. We have the following Python program,

```
from graphics import *

def main():
    win = GraphWin('My window', 300, 300)
    rect = ?
    line1 = ?
    line2 = ?
    rect.draw(win)
    line1.draw(win)
    line2.draw(win)
    win.getMouse()

main()
```



What should be rect, line1, and line2 to have the above output?

- A. `rect = Rectangle(Point(100,100), Point(200,200))`  
`line1 = Line(Point(100,100), Point(150,20))`  
`line2 = Line(Point(150,20), Point(200,100))` ★
- B. `rect = Rectangle(Point(100,100), Point(200,200))`  
`line1 = Line(Point(200,100), Point(280,150))`  
`line2 = Line(Point(280,150), Point(200,200))`
- C. `rect = Rectangle(Point(100,100), Point(200,200))`  
`line1 = Line(Point(200,200), Point(150,280))`  
`line2 = Line(Point(150,280), Point(100,200))`
- D. `rect = Rectangle(Point(100,100), Point(200,200))`  
`line1 = Line(Point(100,100), Point(20,150))`  
`line2 = Line(Point(20,150), Point(100,200))`
- E. `rect = Rectangle(Point(100,100), Point(200,200))`  
`line1 = Line(Point(100,100), Point(200,200))`  
`line2 = Line(Point(100,200), Point(200,100))`

23. What is the output of the following Python program?

```
from graphics import *
```

```
def main():
```

```
    win = GraphWin('My window', 300, 300)
```

```
    win.setCoords(300,300,0,0)
```

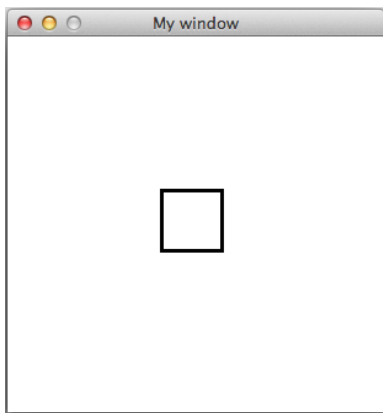
```
    rect = Rectangle(Point(50, 50), Point(100, 100))
```

```
    rect.draw(win)
```

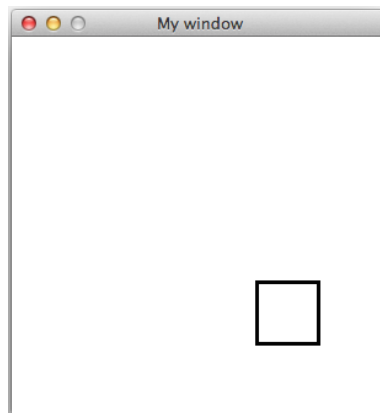
```
    win.getMouse()
```

```
main()
```

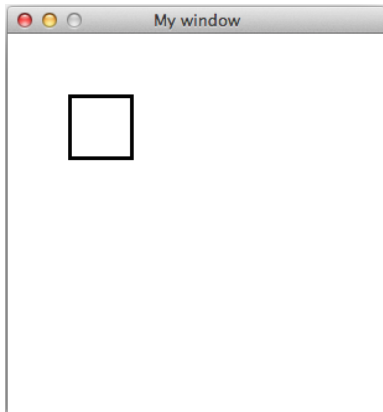
A.



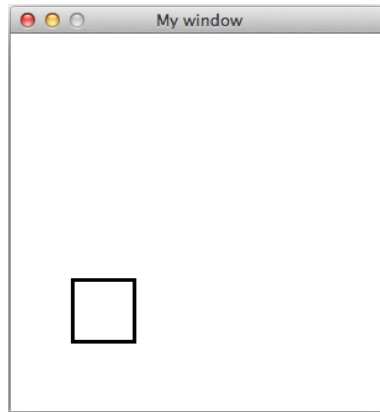
B.



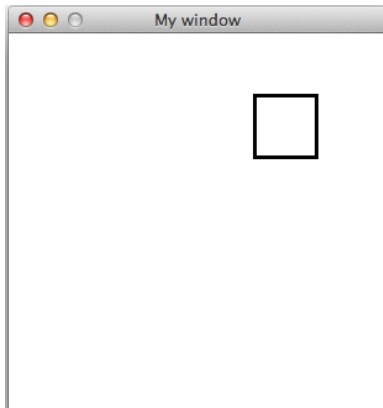
C.



D.



E.





24. What is the output of the following Python program?

```
from graphics import *

win = GraphWin( 'My window' , 500 , 500)

rect = Rectangle( Point(100,100) , Point(200,200))
rect.draw(win)

for i in range(10):
    rect.move(10,15)

print(rect.getP1().getX() , rect.getP2().getY())

win.getMouse()
win.close()
```

A. 190 220

B. 200 190

C. 190 335

**D. 200 350 ★**

E. 210 365

25. Given the contents of the text file `a.txt` as:

```
Janurary
Feburary
March
April
...
December
```

Consider the following Python program:

```
myFile = open("a.txt", "r")
a = myFile.readline()
myFile.close()
```

```
myFile = open("a.txt", "r")
b = myFile.readlines()
myFile.close()
```

Which of the following is true?

- A. `a[1]` is `'J'`
- B. `b[1]` is `'J\n'`
- C. `a[1]` is `'Feburary'`
- D. `b[1]` is `'Feburary'`
- E. **`b[0]` is `'Janurary\n'` ★**