Name:

Introduction to Programming in Python, I Semester, 2014–2015
Quiz 6, 27 October 2014

Answer both questions in the space provided. Use the reverse for rough work.
Don't forget to fill your name!

1. What is the output of this Python program? (Explanations are optional, but can help salvage some marks if you make a careless mistake.)

```
def f():
    def g1():
        global x
        x = x + 100    # Updates x outside f()
    def g2():
        nonlocal x
        x = x + 200    # Updates x defined in f()
    def g3():
        x = 300        # Updates local x

    x = 40
    g1()
    print(x)           # x in f() unchanged by g1(), still 40
    g2()
    print(x)           # x in f() updated by g2() to 240
    g3()
    print(x)           # x in f() unchanged by g3(), remains 240

x = 5
f()
print(x)               # global x, updated by g1() to 105
```

(5 marks)

Answer: 40   For explanations, see comments in code above.
           240
           240
           105

2. Given the following permutation of {a,b,c,d,e,f,g,h,i,j,k,l,m}, what is the next permutation in lexicographic (dictionary) order?

```
c b j a e m f l k i h g d
```

(5 marks)

Answer:

```
c b j a e m g d f h i k l
            ------------
```