Instructions:
1. Err..complete the questions :).
2. When we ask for output, you DON'T have to write the spaces/newlines in.

Program Text:
```
print "X",
print "X",
```

Output:
```
XX
```

Day 4: More Loop Practice
Problem 20:
Each of the following function definitions takes a list as a parameter and solves a specific problem. Correctly fill the blanks in the following code to solve the problems.

There is a way to solve each problem by only filling in the blanks. Don’t just add extra lines to force a solution. Also, there may even be more elegant solutions that don’t use all the blanks – feel free to use those too.

Program Text:
```
def swap_first_last(my_list):
    """This function swaps the first and last elements in a list. It has no return value.""
    temp = __________
    __________ = __________
    __________ = __________
```
Program Text:

```python
def second_biggest(my_list):
    """This function returns the second biggest element in my_list. It assumes that my_list contains distinct, positive integers."""
    second_biggest = -5
    biggest = -1
    for i in my_list:
        if i > biggest:
            second_biggest = biggest
            biggest = i
        elif i > second_biggest:
            second_biggest = i
    return second_biggest
```

**Problem 13:**
You may recall the notion of a power series from Calculus. A power series is an infinite polynomial series that approximation a continuous function. For example, the power series of \( \sin(x) \) is

\[
x - \frac{x^3}{3!} + \frac{x^5}{5!} - \frac{x^7}{7!} + \cdots
\]

The more terms you calculate, the closer your expression will be to \( \sin(x) \) – hence the reason we call it an approximation.

Write a function to calculate \( \sin(x) \) using the above power series (well, fill in the blanks, at least.)

**Note:** You’ve already seen the code for a function that can calculate the factorial of a number (Problem 11.) Assume the existance of a \( \text{factorial}(x) \) function that calculates the factorial of \( x \).
Program Text:

def calculate_sin(x, number_of_terms):
    "Calculates the value of sin(x) using the power series."
    number_of_terms = min(20, number_of_terms) # do at most 20 terms
    sin_value = 0
    for i in range(number_of_terms):
        new_term = x ** __________
        new_term /= factorial(_______________)
        new_term *= (-1) ** _______________
        sin_value += new_term
    return sin_value