

Software Design I (CS 120)  
Quiz 06: Tuesday, 01 November 2016

NAME \_\_\_\_\_

(1) (4 pts.) Write out the exact output of the following code.

```
for ( int i = 0; i < 5; i++ )
{
    System.out.print( i + ":" );
    for ( int j = i; j > 0; j-- )
    {
        System.out.print( " " + j );
    }
    System.out.println();
}
```

- (2) (6 pts.) Write code that prints out the first 5 powers of the first 5 positive integers. That is, for the number  $n$ ,  $1 \leq n \leq 5$ , we want:

$$n \quad n^2 \quad n^3 \quad n^4 \quad n^5$$

For full points, your code should use **nested loops** (and each loop should be used to do some productive work), and the final output should look exactly like the following:

```
1 1 1 1 1
2 4 8 16 32
3 9 27 81 243
4 16 64 256 1024
5 25 125 625 3125
```

---

(3) (5 pts.) Suppose the we run the following method, with input parameter 4.

---

```
public void loop( int num )
{
    for ( int i = num; i >= 0; i-- )
        System.out.print( i + " " );
}
```

---

If we do so, we will get the following output (with an extra, invisible, space at the end):

4 3 2 1 0

Rewrite the method above so that instead of a single integer input, it takes two integers, `num1` and `num2`. It should then loop and print every value from `num1` *down to* `num2`, *inclusive, on a single line*. That is, if we ran it with inputs `num1 == 5` and `num2 == 2`, it would print:

5 4 3 2

If `num1 < num2`, the method should print nothing; if `num1 == num2`, it should print just `num1`.

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