

COMP 100, Final Examination

December, 2002

*Write the answers on this sheet. Please do not ask questions.
Do not leave the room without handing this paper to the examiner.*

Question 1. What does the following segment print?

```
{
    int i = 1;
    while (i <= 5)
    {
        int j = 1;
        while (j <= 5)
        {
            if (i <= j) System.out.print(i + j);
            j++;
        }
        System.out.println();
        i++;
    }
}
```

Question 2. You and your friend invest money. You invest \$1000 at 8%pa. Your friend invests \$2000 but only at 4%. How long will it take for your investment to overtake that of your friend? Print out the balances of both investments each year while your balance is less than your friend's balance. [Hint: Write a single main method to solve this problem.] Include comments in your class.

Solution

```
public class Question1 {
    public static void main(String[] arg)
    {
        double balance1 = 1000;
        final double rate1 = 8;
        double balance2 = 2000;
        final double rate2 = 4;
        int years = 0;
        while (balance1 < balance2)
        {
            balance1 = balance1 * (100 + rate1) / 100;
            balance2 = balance2 * (100 + rate2) / 100;
            years++;
            System.out.println("Years: " + years + "My balance: "
                               + balance1 + "My friends balance: " + balance2);
        }
    }
}
```