Homework – for loop

1. Trace the following programs:

Program	Memory	Output

``for (int i = 3; i <= 5; i++)
{
    System.out.println("Hello");
}
System.out.println("Good-bye");```
	i (int): ~~3~~ ~~4~~ 5	Hello
		Hello
		Hello
		Good-bye
		>

``for (int count = -3; count <= 1;
count = count + 2)
{
    System.out.println(count);
}```
	count (int): ~~-3~~ ~~-1~~ 1	-3
		-1
		1
		>

``for (int i = 8; i > 3; i = i - 1)
{
    System.out.println(i + 2);
}```
	i (int): ~~8~~ ~~7~~ ~~6~~ ~~5~~ ~~4~~ 3	10
		9
		8
		7
		6
		>

Program	Memory	Output
```int first,second;``` ```System.out.print("Enter starting` `value: ");` `first = sc.nextInt( );` `System.out.print("Enter ending` `value: ");` `second = sc.nextInt( );``` ```for (int i = first; i <= second;` `i++)` `{` ` System.out.println(i);` ` System.out.println("*");` `}```	Input: 11,15	
	first (int): 11 second (int): 15 i (int): ~~11~~ ~~12~~ ~~13~~ ~~14~~ 15	i * i * i * i * i * >
	Input: 5, 3	
	first (int): 5 second (int): 3 i (int): 5	

2.
   a) **Backward1.java**: Write a program to output a backwards count by 5's from 100 down to 5.
   b) **Backward2.java:** Modify the program so that before you start the count you can input a number between 100 and 50 so that the program will stop when the count would be less then the number input.

3. **Chart.java**: Develop a chart, with titles, containing the squares and cubes of the natural numbers from 5 to 40.

4. **Paper.java**: Suppose that a large piece of paper with an area of 1.0m2 and a thickness of 0.090 mm is cut in half and the two pieces are stacked, one on top of the other. Suppose further that the process of cutting in half and stacking is repeated over and over again. Write a program to find both the thickness of the pile and the area of each piece after the procedure has been carried out forty times.

5. **TimeTable.java:** Write a program that reads a positive integer n and then prints an "n-times table" containing values up to n X n. For example, if the program reads the values 5, it should print.
   5 X 1 = 5
   5 X 2 = 10
   5 X 3 = 15
   5 X 4 = 20
   5 X 5 = 25
Assume that input is valid.