Tracing Problems

1. Create a table to show what happens to each variable during this code segment

```
int num1, num2;
num2 = 0;
do
{
    num1 = num2 + 1;
    if (num1 % 2 == 1)
    {
        Console.WriteLine(num2);
    }
    else
    {
        num1 = num1 + 1;
    }
    num2 = num2 + 1;
} while (num2 <= 4);
```

num1	num2	Output num2
1	0	0
2	1	2
3	2	4
3	3	
4	4	
5	5	
5		

2. Create a table to show what happens to each variable during this code segment

```
int num1=0, num2=0, num3=0;
num1 = 1;
do
{
    num2 = 1;
    if (num1 % 2 == 0)
    {
        num1 = num1 + 3;
        num2 = num2 + 2;
        Console.WriteLine(num3);
    }
    else
    {
        num1 = num1 + 1;
        Console.WriteLine(num1);
    }
    num3 = num1 + num2;
} while (num3 % 2 == 1);
```

num1	num2	num3	Output	
			num1	num3
0	0	0	2	3
1	1	3		
2	1	8		
5	3			

3. Create a table to show what happens to each variable during this code segment

```
int[] numbers = {10,8,6};
int temp;
for (int i = 0; i < 2; i++)
{
    for (int j = 0; j < 2; j++)
    {
        if (numbers[j + 1] < numbers[j])
        {
            temp = numbers[j + 1];
            numbers[j + 1] = numbers[j];
            numbers[j] = temp;
        }
    }
}
```

i	j	numbers[0]	numbers[1]	numbers[2]	temp
0	0	10	8	6	8
	1	8	10	10	6
	2		6		6
1	0	6	8		
	1				
	2				

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