CSCI 002 NAME_____

Provide a clear trace of the following recursive functions. Use a separate piece of paper please.

1. **Sum**

```
cout << sumUpTo(8) << endl;
```

Function**********

```
int sumUpTo(int n) {
	int sum = 0;
	if (n == 1) sum = 1;
	else sum = n + sumUpTo(n - 1);

	return sum;
}
```

2. **Binary Search**

```
const int arraySize = 9;
int a[] = {1,6,7,12,15,22,26,41,50};
cout << binarySearch(a, 0, arraySize, 6) << endl;
```

Function **********

```
int binarySearch(const int anArray[], int first, int last, int target) {

	int index;
	if (first > last)
		index = -1;
	else {
		int mid = first + (last - first) / 2;
		if (target == anArray[mid])
			index = mid;
		else if(target<anArray[mid])
			index = binarySearch(anArray, first, mid - 1, target);
		else
			index = binarySearch(anArray, mid + 1, last, target);
	}

	return(index);
}
```