

1) (10 pts) DSN (Recursive Coding)

Define the weighted sum of an integer array $a[0], a[1], \dots, a[n-1]$ to be $\sum_{i=1}^n (ia[i-1])$. For example, the weighted sum of the array $[7, 5, 8]$ would be $1 \times 7 + 2 \times 5 + 3 \times 8 = 41$. Write a recursive function that takes in an array `numbers` and its length `n`, and returns its weighted sum. You may assume that there will be no issues with integer overflow and that **n is non-negative**.

```
int weightedSum(int numbers[], int n) {  
    if (n == 0) return 0;  
  
    return n*numbers[n-1] + weightedSum(numbers, n-1);  
}
```

Grading: 3 pts for base case, give 2 pts if they use $n = 1$,
1 pt return
3 pts for calculating term $n \cdot \text{numbers}[n-1]$
1 pt rec call
1 pt param `numbers`
1 pt param `n-1`