Zach Pratt CS350 2015-09-09

Prove difference in associative operations

```c
#include <stdio.h>
#include <math.h>

float get_using_rightmost(float * p) {
        return 1+*p+*p+*p+*p+*p+*p+*p+*p+*p+*p+*p+*p;
}

float get_using_leftmost(float * p) {
        return ((((((((((1+*p)+*p)+*p)+*p)+*p)+*p)+*p)+*p)+*p)+*p)+*p);
}

int main() {
        float p = pow(10, -7);
        float rightmost = get_using_rightmost(&p);
        float leftmost = get_using_leftmost(&p);
        printf("We are currently adding to one the number: %.20f\n", p);
        printf("Addition using rightmost associativity came to: %.20f\n", rightmost);
        printf("Addition using leftmost associativity came to: %.20f\n", leftmost);
        if (leftmost != rightmost) {
                printf("\nCongratulations! The results are not the same!\n\n");
        } else {
                printf("The results are the same.\n");
        }
}
```

```
We are currently adding to one the number: 0.00000010000000116861
Addition using rightmost associativity came to: 1.00000131130218505859
Addition using leftmost associativity came to: 1.00000119209289550781

Congratulations! The results are not the same!
```