

The Pseudocode Solution

```
int x = 10;

function adder(int y) {
    // The behavior of 'x' in this line is the point of difference
    return x + y;
}

function calculator(int z, function func_to_run) {
    int x = 2;

    int result = func_to_run(z);
    print(result);
}

calculator(5, adder);
```

C++ software solutions

Static Scope : Results in 15

```
#include <iostream>
#include <functional>

int x = 10;

int adder(int y) {
    return x + y;
}

void calculator(int z, std::function<int(int)> func_to_run) {
    int x = 2;
    int result = func_to_run(z);
    std::cout << "Static result: " << result << std::endl;
}

int main() {
    calculator(5, adder);
    return 0;
}
```

Dynamic Scope : Results in 7

```
#include <iostream>
#include <functional>

int* current_x;

int adder(int y) {
    return *current_x + y;
}

void calculator(int z, std::function<int(int)> func_to_run) {
    int x = 2;
    int* saved_x_ptr = current_x;
    current_x = &x;
    int result = func_to_run(z);
    current_x = saved_x_ptr;
    std::cout << "Dynamic result: " << result << std::endl;
}

int main() {
    int global_x = 10;
    current_x = &global_x;
    calculator(5, adder);
    return 0;
}
```