Mini Quiz 16

Name: _____

Kerberos: _____

Consider the following x86 assembly code:

```
 func_F:  // A function func_F
     // has a single parameter, say, 'x', passed in register rdi
1:   enter $(8*3), $0 // function prologue, sets stack for locals
2:   movq $0, -8(%rbp)   // variable a
3:   movq $0, -16(%rbp)  // variable b
4:   movq $0, -24(%rbp)  // variable c

5:   movq %rdi, %r10
6:   movq %r10, -8(%rbp)
7:   movq $1, %r10
8:   movq %r10, -16(%rbp)
9:   movq -8(%rbp), %r10
10: movq %r10, -24(%rbp)

11: movq -16(%rbp), %r10
12: addq %r10, -24(%rbp)
13: movq -24(%rbp), %rax // return value stored in %rax
14: leave  // function epilogue
15: ret    // returns to the caller function
```

Q: Write Decaf code that could have resulted in this x86 code:

```
int F(int x) {
    int a, b, c; // lines 1-4
    a = x; // lines 5-6
    b = 1; // lines 7-8
    c = a; // lines 9-10
    c += b; // lines 11-12
    return c; // lines 13-15
}
```