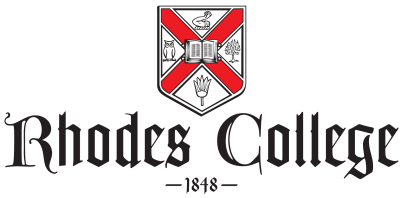
COMP 231-01
Introduction to Computer Organization
Homework 5



Due Date: Tuesday, November 19

1. Consider the following C code:

```
int a[1000];
main() {

   int r10 = 5;  // lower bound of array slice
   int r16 = 10; // upper bound of array slice
   ...
   int r22 = f(r10, r16);
   ...
   r23 = r10 + r16 + r22;
 }

 int f(int x, int y) {
    int r10 = 0; // local sum
    int r16 = 1; // local product

    for (int r17 = x; r17 < y; r17++) {
       r10 += a[r17];
       r16 *= a[r17];
    }
    return r10 + r16;
}
```

Convert this code to NIOS assembly. Assume that each of the integers that have register-like names live in the same register. Also assume that the array `a[]` begins at memory address 1000. Show the code to allocate a stack frame and preserve both caller-save and callee-save registers.