Problem COM-1
Perform at least three standard compiler optimizations on the following C code fragment by writing the optimized version (in C) to the right.

```c
int foo(int a, int b) {
    int i = 0, z = 0;
    int x = 32;
    int tmp = a*b;
    while (bar(a*b, i)) {
        z = baz(z*x);
        i++;
    }
    return(z);
}
```

Briefly describe which standard compiler optimizations you applied:
constant propagation ($x = 32$), strength reduction ($z*32 \rightarrow z<<5$), dead code elimination ($int x = 32$), and loop invariant removal ($a*b$).