

Bitwise Operations

1. For the following piece of code:

```
unsigned mystery5(unsigned x, unsigned p) {  
    for (int result = 1; p != 0; p = p>>1) {  
        if (p & 0x1) {  
            result = result * x;  
        }  
        x = x*x;  
    }  
    return result;  
}
```

- a. Simulate it on **x = 2, p = 9**

- b. **x = 3, p = 4**

- c. What does this function do?

2. Fill in the blanks so that the following function in C **return the maximum integer in two's complement**, using only **integers between 1-32 (inclusive)** and **as few operators as possible**:

```
/** What should the parameter be? Fill in "void" if nothing is needed. */
```

```
int maxTwoC(_____) {  
    return _____;  
}
```

3. Fill in the blanks so that the following function in C **returns 1 if x==y, otherwise 0**, using **as few operators as possible**:

```
int checkEqual(int x, int y) {  
    return _____;  
}
```