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For each function below, trace through it with reasonably small integer values. What does each function do?
HINT: You should assume integers are 8 bits for the purpose of this exercise.

```
int mystery1(int a, int b) {
    int c = a - b,
        d = (c >> 7) & 1,
        mystery = a - c * d;
    return mystery;
}
```

Trace: mystery1(3, 7) returns 7
Trace: mystery1(8, 7) returns 8

Summary: mystery1 finds the max of the two arguments, if a > b return a, if b > a return b.

```
void mystery2(int values[], int i, int j) {
    values[i] = values[i] ^ values[j];
    values[j] = values[i] ^ values[j];
    values[i] = values[i] ^ values[j];
}
```

Note: Improper C++ syntax found below.
Trace: mystery2([1, 2, 3, 4], 0, 3) values = [4, 2, 3, 1]
Trace: mystery2([1, 2, 3, 4], 1, 2) values = [1, 3, 2, 4]

Summary: Swaps the ints found at the specified indices

```
int mystery3(int x, int y) {
    int s, c;
    s = x ^ y; = 10
    c = x & y; = 0
    while (c != 0) {
        c = c << 1; =
        x = s; = 2
        y = c; = 10
        s = x ^ y; = 7
        c = x & y; = 0
    }
    return s;
}
```

Trace: mystery3(5, 7) returns 12
Trace: mystery3(2, 8) returns 10

Summary: Adds the two arguments