Note: every expression has a type + value — This includes assignments!

Warning: don't confuse = with ==.

```
if (x == 9) ...   ✓

if (x = 9) {
    // this will always happen!
    ...
}
```

Why? ① x = 9 has value 9.

② when treating integers as booleans,

0 ≡ false

everything else ≡ true.

Exercise: read 2 integers n, m and print a n × m rectangle of '*' to stdout.

e.g. if n = 2, m = 3, should print

```
***
***
```

```
int n, m;
cin >> n >> m; // ≡ (cin >> n) >> m;
```

evaluates to cin!

```
for (int i = 0; i < n; i++) {
    // print a row of m '*'s.
    for (int j = 0; j < m; j++) {
        cout << '*';
    }
    cout << '\n'; // end of row.
}
```

Exercise: Compute the greatest common divisor of two non-negative integers. (E.g. gcd(9, 6) = 3. gcd(23, 15) = 1)

Idea: "brute force" approach.

Say inputs are called n, m.

Range of possible values for gcd(n, m)

$= \{1, 2, \ldots \min(n, m)\}$.

Boolean expr. to check if d is a common divisor of n, m:

$(n \% d == 0 \;\&\&\; m \% d == 0)$

Now we want to find the largest value of d that satisfies this test.