***Q:** **When I use the postfix version of ++ or --, just when is the increment or decrement performed? [p. 62]**

A: That's an excellent question. Unfortunately, it's also a difficult one to answer. The C standard introduces the concept of "sequence point" and says that "updating the stored value of the operand shall occur between the previous and the next sequence point." There are various kinds of sequence points in C: the end of an expression statement is one example. By the end of an expression statement, all increments and decrements within the statement must have been performed; the next statement can't begin to execute until this condition has been met.

Certain operators that we'll encounter in later chapters (logical *and*, logical *or*, conditional, and comma) also impose sequence points. So do function calls: the arguments in a function call must be fully evaluated before the call can be performed. If an argument happens to be an expression containing a ++ or -- operator, the increment or decrement must occur before the call can take place.

Q: What do you mean when you say that the value of an expression statement is discarded? [p. 65]

A: By definition, an expression represents a value. If `i` has the value 5, for example, then evaluating `i + 1` produces the value 6. Let's turn `i + 1` into a statement by putting a semicolon after it:

```
i + 1;
```

When this statement is executed, the value of `i + 1` is computed. Since we have failed to save this value—or at least use it in some way—it is lost.

Q: But what about statements like `i = 1;`? I don't see what is being discarded.

A: Don't forget that = is an operator in C and produces a value just like any other operator. The assignment

```
i = 1;
```

assigns 1 to `i`. The value of the entire expression is 1, which is discarded. Discarding the expression's value is no great loss, since the reason for writing the statement in the first place was to modify `i`.

Exercises

Section 4.1

1. Show the output produced by each of the following program fragments. Assume that `i`, `j`, and `k` are `int` variables.

(a)
```
i = 5; j = 3;
printf("%d %d", i / j, i % j);
```

(b)
```
i = 2; j = 3;
printf("%d", (i + 10) % j);
```

(c)
```
i = 7; j = 8; k = 9;
printf("%d", (i + 10) % k / j);
```