Exercises

Section 6.1

1. What output does the following program fragment produce?

```
i = 1;
while (i <= 128) {
  printf("%d ", i);
  i *= 2;
}
```

Section 6.2

2. What output does the following program fragment produce?

```
i = 9384;
do {
  printf("%d ", i);
  i /= 10;
} while (i > 0);
```

Section 6.3

*3. What output does the following `for` statement produce?

```
for (i = 5, j = i - 1; i > 0, j > 0; --i, j = i - 1)
  printf("%d ", i);
```

W 4. Which one of the following statements is not equivalent to the other two (assuming that the loop bodies are the same)?

(a) `for (i = 0; i < 10; i++) ...`
(b) `for (i = 0; i < 10; ++i) ...`
(c) `for (i = 0; i++ < 10; ) ...`

5. Which one of the following statements is not equivalent to the other two (assuming that the loop bodies are the same)?

(a) `while (i < 10) {...}`
(b) `for (; i < 10;) {...}`
(c) `do {...} while (i < 10);`

6. Translate the program fragment of Exercise 1 into a single `for` statement.

7. Translate the program fragment of Exercise 2 into a single `for` statement.

*8. What output does the following `for` statement produce?

```
for (i = 10; i >= 1; i /= 2)
  printf("%d ", i++);
```

9. Translate the `for` statement of Exercise 8 into an equivalent `while` statement. You will need one statement in addition to the `while` loop itself.

Section 6.4

W 10. Show how to replace a `continue` statement by an equivalent `goto` statement.

11. What output does the following program fragment produce?