Exercises

Section 3.1

1. What output do the following calls of `printf` produce?

   (a) `printf("%6d,%4d", 86, 1040);`
   (b) `printf("%12.5e", 30.253);`
   (c) `printf("%.4f", 83.162);`
   (d) `printf("%-6.2g", .0000009979);`

W 2. Write calls of `printf` that display a `float` variable `x` in the following formats.

   (a) Exponential notation; left-justified in a field of size 8; one digit after the decimal point.
   (b) Exponential notation; right-justified in a field of size 10; six digits after the decimal point.
   (c) Fixed decimal notation; left-justified in a field of size 8; three digits after the decimal point.
   (d) Fixed decimal notation; right-justified in a field of size 6; no digits after the decimal point.

Section 3.2

3. For each of the following pairs of `scanf` format strings, indicate whether or not the two strings are equivalent. If they're not, show how they can be distinguished.

   (a) `"%d"` versus `" %d"`
   (b) `"%d-%d-%d"` versus `"%d -%d -%d"`
   (c) `"%f"` versus `"%f "`
   (d) `"%f,%f"` versus `"%f, %f"`

*4. Suppose that we call `scanf` as follows:

```
scanf("%d%f%d", &i, &x, &j);
```

If the user enters

```
10.3 5 6
```

what will be the values of `i`, `x`, and `j` after the call? (Assume that `i` and `j` are `int` variables and `x` is a `float` variable.)

W *5. Suppose that we call `scanf` as follows:

```
scanf("%f%d%f", &x, &i, &y);
```

If the user enters

```
12.3 45.6 789
```

what will be the values of `x`, `i`, and `y` after the call? (Assume that `x` and `y` are `float` variables and `i` is an `int` variable.)

6. Show how to modify the `addfrac.c` program of Section 3.2 so that the user is allowed to enter fractions that contain spaces before and after each / character.

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*Starred exercises are tricky—the correct answer is usually not the obvious one. Read the question thoroughly, review the relevant section if necessary, and be careful!