

Name \_\_\_\_\_

*Working with stdin and stdout*

提示

1. Write a simple C program that prompts for an ASCII code value such as 65 (see [asciitable.com](http://asciitable.com)) then prints the character having that code.
2. Write a program that prompts for a floating-point number then prints the number first in decimal point notation then in exponential notation. Present the output in the following format:

The input is 98.600 or 9.8600 e+001

3. There are approximately  $3.156 \times 10^{+7}$  seconds in a year. Write a program that requests your age in years and then displays the equivalent value in seconds. Think about an informative way to print the answer.
4. The mass of a single molecule of water is about  $3.0 \times 10^{-23}$  grams. A quart of water is about 950 grams. Write a program that requests an amount of water, in quarts, and displays the number of water molecules in that amount. Think about an informative way to print the answer.
5. Write a program that prompts for a temperature value, the scale, Celsius, Fahrenheit, or Kelvin and the scale to which that temperature is to be converted. Display the result in the requested scale. Think about an informative way to print the answer.
6. When designing high-speed circuits, it is often very important to know the delay from the point where the signal enters the path until it leaves.

The delay of a signal propagating along a printed circuit board trace is 180 picoseconds ( $10^{-12}$  seconds) per inch. The delay through a logic device is approximately 5 nanoseconds ( $10^{-9}$  seconds). Assume that the logic devices are placed on the circuit board with a printed circuit board trace of 0.1 inches connecting the output of one device to the input of the next.

Write a program that prompts the user for the number of logic devices in a signal path and displays the total delay along the path. Think about an informative way to print the answer.

7. You have the following recipe for barbeque sauce:

- 1 tablespoon of fat
- ½ cup of water
- 2 tablespoons vinegar
- 1 tablespoon Worcestershire sauce
- ¼ cup lemon juice
- 2 tablespoons brown sugar
- 1 cup chili sauce
- ½ teaspoon salt
- ¼ teaspoon paprika
- 1 teaspoon pepper
- 1 teaspoon dry mustard

Sometimes, you want to make a lot and sometimes a little. Write a program that prompts for the amount you want (1, 2, 3...times the single recipe) and displays the amount of each ingredient for the size of the batch that you want. Think about an informative way to print the answer.

8. You want to tile a floor with 12 inch tiles (12" x 12"). Tiles come 24 to the box. Write a program that asks for the length and width of the room and **returns the number of boxes** of tiles needed to complete the job. Think about an informative way to print the answer.