



# Problem of the Week

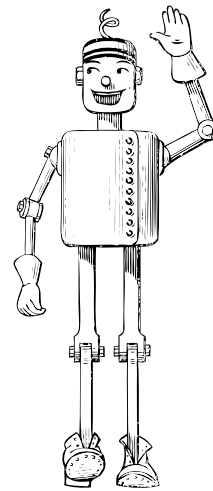
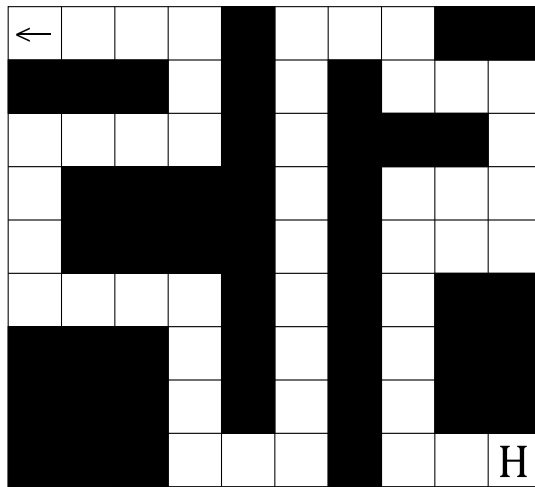
## Problem B and Solution

### Code Freddy Home

#### Problem

Starting at the top left square of the maze, and facing left (symbolized by ←), Freddy the Robot must follow your program commands to get to his Home Charging Station at **H**. Freddy can only turn right (clockwise on the diagram), and will only turn the number of degrees which you tell him. As well, he will go exactly the number of squares you tell him.

For example, if he starts facing ←, and your command said, “Turn 180 and go 3 spaces”, he would turn 180° right (clockwise) and then move 3 spaces forward (to the right).



Write a set of 15 commands which will guide Freddy from the start to Home. Each command should be of the form: **Turn \_\_\_ and go \_\_\_ spaces.**

EXTENSION: Draw your own maze and create a program to help Freddy go Home.

#### Solution

Here are the required 15 commands: (Note there two options for turns 12 to 14. The second option is in parentheses.)

1. Turn 180° and go 3 spaces.
2. Turn 90° and go 2 spaces.
3. Turn 90° and go 3 spaces.
4. Turn 270° and go 3 spaces.
5. Turn 270° and go 3 spaces.
6. Turn 90° and go 3 spaces.
7. Turn 270° and go 2 spaces.
8. Turn 270° and go 8 spaces.
9. Turn 90° and go 2 spaces.
10. Turn 90° and go 1 space.
11. Turn 270° and go 2 spaces.
12. Turn 90° and go 3 (or 2) spaces.
13. Turn 90° and go 2 spaces.
14. Turn 270° and go 4 (or 5)spaces.
15. Turn 270° and go 2 spaces.

Now Freddy is home!

