Lab 4 (September 20 or September 21)

Instructions: Complete the steps below. Be sure to show your code to one of the lab TAs before you leave, so that you can receive credit for this lab. You must also upload a copy of all your source code (.java) files to the link on Blackboard by 11:59 PM on Thursday, September 21.

1. Write a Java program that prompts the user to enter a sentence (a single `String`) that contains at least ***four*** words (for the purposes of this program, a "word" is any sequence of letters, digits, and/or punctuation that does not contain any spaces, like `abc123#`). Words are always separated by a single space. Your program should print ***only*** the ***third*** word from the input. Assume that the input always contains at least four "words".

   Sample execution: (program output is shown here in *italics*, while user input is shown here in **boldface**)

   Please enter a sentence with at least four words: **Use extension x-5001 to reach me**
   The third word is x-5001

2. Write a Java program that uses a loop to print a neatly-formatted table that displays the sines and cosines of the degrees from 0 through 360, increasing by 10 degrees per row, using the `Math.sin()` and `Math.cos()` methods. Round your answers to keep no more than four digits after the decimal point. The columns do not need to line up exactly, but there should be a clear separation between each value in each table row (**Hint:** careful use of the `\t` (tab) escape character may help here).

```
Degree Sin     Cos
0      0.0     1.0
10     0.1736  0.9848
...
350    -0.1736 0.9848
360    0.0     1.0
```

Grading Guidelines: This lab is graded on a scale of 0-3 points, assigned as follows:

0 points: Student is absent or does not appear to have completed any work for the lab

1 point: Student has written only one program, but it does not compile or run at all due to errors.

2 points: Student has written (or attempted to write) both programs, but only one compiles and runs without error.

3 points: Student has written both programs, and they both compile and run correctly, without any apparent errors.