CIS 36A, Spring 2015
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LAB 1 (part A)

1. Print a nametag

At a certain conference, each delegate has to wear a tag showing their name and the organization they represent. (The names and organizations will be written on the tags by hand after printing).

Write a class **`Nametag`** to print, to the console, the following blank nametag. Include at least two methods: a **`main`** method that is your program's starting point, and a separate method to print sequences of **#** (and nothing else). Do not use any strings that contain more than 1 **#** in them; rather, use a loop to print repeated **#**s. (In the figure below, there are 75 **#**s in the first line).

```
###########################################################################
###                          ANNUAL CONFERENCE                          ###
###########################################################################
###  NAME:                                                              ###
###                                                                     ###
###########################################################################
### ORGANIZATION:                                                       ###
###                                                                     ###
###########################################################################
```

2. Circle Area

Write a class **`CircleArea`** that, when run, prompts the user for a radius *r*, and then prints

- The area and circumference of a circle with that radius.
- The volume and surface area of a sphere with that radius.

Display the radius value and the results in a clear format. Here are the formulae (use the Java built-in double **`Math.PI`** for Π):

For a circle,

- circumference = $2 \Pi r$
- area = Πr^2

For a sphere,

- volume = $4 \Pi r^3 / 3$
- surface area = $4 \Pi r^2$

Test the results of your program for a circle and sphere with a radius of **`7.5`**. Include a sample console output in your class, as a multi-line comment at the bottom of the class. For instance:

```
/* SAMPLE RUN

…copy console here

*/
```

3. Date Converter

Complete the program available at **`http://bit.ly/1CArBvc`** , which is intended to convert a "day number"—a number between 1 and 366 indicating a particular day in the year 2008—to a calendar date of the form "month/day". For instance, if the user enters **`365`**, the program should return **`12/30`** (because in the leap year 2008—a year containing February 29th—the 365th day is December 30th.

There are three places in the framework where you can add statements, indicated by comments containing **`***`**. You may not need to add code in all three places.

Additionally, change the **`daysInMonth(int month)`** method to use a **`switch`** statement rather than an **`if…else`** statement.

Include, in a multi-line comment at the end of your class, the console contents of several runs of your program. You should treat these as *test cases* that will usefully show that your program works correctly. For instance, **`32`** is a good test case to ensure that a program properly returns **`2/1`** rather than **`1/32`**.

NOTE: this is part A of the lab 1 assignment; there will be a (shorter) part B released next week.