27. Write Java methods for printing the following pattern for a given size (example is size 3). You should define other methods as is proper (i.e. use proper decomposition).

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28. Write a java method that simulates the roll of n dice (each with six sides). The method should return the total of the rolls and if debug is true then it should print the result (in the given form) to the error stream as well. For example, roll(3, true) could result in 12 being returned and 3 + 5 + 4 = 12 printed to the error stream.

29. Write a complete Java class that represents an immutable two dimensional point in Cartesian space. You should include: a two parameter constructor, a default constructor (that constructs the origin using your two parameter constructor), an equals method, a toString method, accessors, and a distance method that returns the distance of the point to the origin. You do not have to give a hashCode method, but otherwise follow good programming practices.

30. Write a complete Java program that opens all of the data files (files that end in .dat regardless of case) in the current working directory. For each line in each file it prints the Filename, then line number (starting from 1) and the sum of all of the numbers on that line. In this case a number is any sequence of digits with an optional decimal point surrounded by whitespace or file boundaries. You may assume that all valid “numbers” in the file can be stored in a double, as can their sum. Your program should use proper method decomposition, but no comments or import statements are needed.