1. Use a for loop to print a box like the one below. Allow the user to specify how wide and how  
   high the box should be. [Hint: print('\*' \* 10) prints ten asterisks.]

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\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

1. Use a for loop to print a box like the one below. Allow the user to specify how wide and how  
   high the box should be.

\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*  
\* \*  
\* \*  
\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

1. Use a for loop to print a triangle like the one below. Allow the user to specify how high the  
   triangle should be.

\*  
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\*\*\*\*

1. Use a for loop to print an upside down triangle like the one below. Allow the user to specify  
   how high the triangle should be.

\*\*\*\*  
\*\*\*  
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\*

1. Use for loops to print a diamond like the one below. Allow the user to specify how high the  
   diamond should be.

\*  
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 \*\*\*\*\*  
 \*\*\*\*\*\*\*  
 \*\*\*\*\*  
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 \*

1. Write a program that prints a giant letter A like the one below. Allow the user to specify how  
   large the letter should be.

\*  
 \* \*  
 \*\*\*\*\*  
 \* \*  
\* \*

1. In this exercise you will create a program that computes the average of a collection  
   of values entered by the user. The user will enter 0 as a sentinel value to indicate  
   that no further values will be provided. When user enter 0 program should compute and print the average.

Hint: Because the 0 marks the end of the input it should not be included in the  
average.

1. A particular retailer is having a 60 percent off sale on a variety of discontinued  
   products. The retailer would like to help its customers determine the reduced price  
   of the merchandise by having a printed discount table on the shelf that shows the original

prices and the prices after the discount has been applied. Write a program that  
uses a loop to generate this table, showing the original price, the discount amount,  
and the new price for purchases of $4.95, $9.95, $14.95, $19.95 and $24.95. Ensure  
that the discount amounts and the new prices are rounded to 2 decimal places when  
they are displayed.

1. Write a program that displays a temperature conversion table for degrees Celsius and  
   degrees Fahrenheit. The table should include rows for all temperatures between 0  
   and 100 degrees Celsius that are multiples of 10 degrees Celsius. Include appropriate  
   headings on your columns. The formula for converting between degrees Celsius and  
   degrees Fahrenheit can be found on the internet.
2. Write a program that computes the perimeter of a polygon. Begin by reading the x  
   and y values for the first point on the perimeter of the polygon from the user. Then  
   continue reading pairs of x and y values until the user enters a blank line for the

x-coordinate. Each time you read an additional coordinate you should compute the  
distance to the previous point and add it to the perimeter. When a blank line is entered  
for the x-coordinate your program should add the distance from the last point back  
to the first point to the perimeter. Then it should display the total perimeter. Sample  
input and output is shown below, with user input shown in bold:

Enter the x part of the coordinate: 0Enter the y part of the coordinate: 0Enter the x part of the coordinate: (blank to quit): 1Enter the y part of the coordinate: 0Enter the x part of the coordinate: (blank to quit): 0Enter the y part of the coordinate: 1Enter the x part of the coordinate: (blank to quit):  
The perimeter of that polygon is 3.414213562373095

1. In this exercise, you will create a program that reads words from the user until the  
   user enters a blank line. After the user enters a blank line your program should display each word entered by the user exactly once. The words should be displayed in  
   the same order that they were entered. For example, if the user enters:

*first  
second  
first  
third  
second*

then your program should display:

*first  
second  
third*

1. Create a program that reads integers from the user until a blank line is entered. Once  
   all of the integers have been read your program should display all of the negative  
   numbers, followed by all of the zeros, followed by all of the positive numbers. Within  
   each group the numbers should be displayed in the same order that they were entered by the user. For example, if the user enters the values 3, -4, 1, 0, -1, 0, and -2 then  
   your program should output the values -4, -1, -2, 0, 0, 3, and 1. Your program  
   should display each value on its own line.
2. A proper divisor of a positive integer, n, is a positive integer less than n which divides  
   evenly into n. Write a program that computes all of the proper divisors of a positive  
   integer. Program will return a list containing all of the proper divisors as its only result.
3. In order to win the top prize in a particular lottery, one must match all 6 numbers  
   on his or her ticket to the 6 numbers between 1 and 49 that are drawn by the lottery  
   organizer. Write a program that generates a random selection of 6 numbers for a lottery ticket. Ensure that the 6 numbers selected do not contain any duplicates.  
   Display the numbers in ascending order.

Hint. Use random module to generate random integers. Use this module only for generating random integers.

1. Write a program that determines whether or not a list of values is in sorted order (either ascending or descending). The program reads a list of numbers from the user and then report whether or not the list is sorted.

*Make sure you consider these questions when completing this exercise: Is a list that is empty in sorted order? What about a list containing one element?*