a. Write a C program that finds the largest in a series of numbers entered by the user. The program must prompt the user to enter numbers one by one. When the user enters 0 or a negative number, the program must display the largest nonnegative number entered:

```
Enter a number: 60
Enter a number: 100
Enter a number: 3
Enter a number: 400
Enter a number: 3
Enter a number: 0

The largest entered is 400.
```

b. The value of the mathematical constant e can be expressed as an infinite series:

$$\varepsilon = 1 + \frac{1}{1!} + \frac{1}{2!} + \frac{1}{3!} + ...$$

Write a program that approximates e by computing the value of

$$\varepsilon = 1 + \frac{1}{1!} + \frac{1}{2!} + \frac{1}{3!} + ... + \frac{1}{n!}$$ where n is an integer entered by the user.

c. Write a program that calculates the value of the following statements for x in the range of -1<=x<=5 with a step size of 0.25 using a **while** loop first and then **for** loop.

f(x) = $2x\sin(x) + \cos(x^2\sqrt{2x})$

d. Write a program that prints an inverted pyramid as follows. The program needs to read the number of rows from the user. A sample run is as follows:

```
Enter number of rows: 3
* * * * *
  * * *
    *


Enter number of rows: 8
* * * * * * * * * * * * * * * *
  * * * * * * * * * * * * * * *
    * * * * * * * * * * * * * *
      * * * * * * * * * * * * *
        * * * * * * * * * * *
          * * * * * * * * * *
            * * * * * * * * *
              * * * * * * *
                * * * * *
                  * * *
                    *
```