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#!/bin/sh
#Question:
# Write a shell program to accept a positive integer number from the terminal
# and calculate the factorial of the number. Factorial of a number n is
# defined as factorial(n) = n * (n-1) * . . .* 2 * 1
# Given factorial(0) = 1

# Always write assumptions made, either as comment or as description
# and keep the rough work, do not erase it out

# accept a integer from the terminal
echo "Enter a positive integer n: "
read n

# Its shell script, use $ to get value of variable ,
# And enclose in backquote `` to imply its command and not just a string

echo "The $n factorial number is: "
if [ $n -eq 1 ] # factorial(0) = 1
then
    echo "1"
else
    factorial=1 # start with factorial=1
    i=1 # and from i = 1
    while [ $i -le $n ] # loop to multiply numbers from 1 till n to factorial
    do
        factorial=`expr $factorial \* $i ` # escape * as \*
        i=`expr $i + 1 `
    done
    echo "$factorial"
fi

# OR
# using function definition in calculator , write factorial function and
# call factorial( number n )

echo "The $n factorial number is: "

echo " define factorial (x)
{
    if (x <= 1) return (1);
    return ( factorial(x-1) * x );
};
factorial($n) " | bc

```