1. Write a program that asks the user for a positive integer greater than 1and expresses it as a product of prime factors. Your program must include function ***int factor(int n)*** that takes a positive integer as its argument and returns the argument's smallest positive factor greater than 1. Note that the function returns the argument itself if the argument happens to be prime.
2. We can evaluate the value of π by computing the area of a quarter circle of radius Approximate this area by a series of trapezoids of height h, which is taken to be 2 at the beginning and continuously halved until the value of π is accurate to within 10^{-5}. Your program must include function ***double trapezoid (float base1, float base2, float height)*** that computes the area of a trapezoid given its two bases and a height. There should also be another function ***double side3 (float hypotenuse, float side)***, which computes the third side of a right triangle given its hypotenuse and a side. You are not allowed to use arrays in this program.