sum_(k=1)^(infty)((-1)^(k+1))/(2k-1)1. Given a formula forπ as follows: compute the sum of the first eight terms.

2. A sequence of integers is such that all elements of the sequence are either greater than or less than their immediate predecessors. Assuming that all input integers are positive and distinct and are terminated by a negative number, write a program to determine the length of the longest sequence in the input. Note that the last element of a sequence is also the first element of the next sequence.

3 . Write a program to read in a sequence of positive integers terminated by a negative negative number and compute the sum of the 1st, 3rd, 6th, 10th, 15th, 21st, … elements of the sequence.

4. Ask the user for a positive integer *s* and find all sequences of consecutive positive integers whose sum is equal to *s*. Your program must include the function given in class.