# Lab8-Ch3 Algorithm

1) Select the correct output of the below algorithm with the following input:

3, -1, 2, 9, 36, -7, 6, 4

Algorithm   
Input: a\_1, a\_2,..., a\_n, a sequence of numbers   
 n, the length of the sequence   
 i, a number   
Output: ??   
  
  
i := 1   
While (i^2 ≠ a\_i and i < n)  
 i := i + 1   
End-while   
If (i^2 = a\_i) Return( i )   
Return( -1 )

a. -1

b. 3

c. 5

d. 6

2) What is the final value of count after the pseudocode fragment shown below?

count = 0   
For i = 1 to 3  
 For j = i+1 to 4   
 count := count + (j - i)   
 End-for   
End-for

a. 0

b. 10

c. 20

d. 35

3) Select the function that is .

a.

b.

c.

d.

4) Select the asymptotic worst-case time complexity of the following algorithm:

Algorithm   
Input: a1, a2, ..., an, a sequence of numbers   
n, the length of the sequence   
x, a number   
Output: ??  
   
For i = 1 to n-1   
 For j = i+1 to n   
 For k = 1 to n   
 If ((ai)^2 + (aj)^2 = (ak)^2) Return( "True" )   
 End-for   
 End-for   
End-for   
Return( "False" )

a.

b.

c.

d.

5) Select the asymptotic worst-case time complexity of the following algorithm:

Algorithm   
Input: a1, a2, ..., an, a sequence of numbers   
 n, the length of the sequence   
 x, a number   
Output: ??   
  
  
For i = 1 to 3   
 If (ai < x) Return("True")   
End-for   
Return( "False" )

a.

b.

c.

d.