Problem

Algorithm

Program in C

Problem 1

A1 A2 A3 A4 A5

1. Less Time
2. Less Memory

These can be determines using asymptotic notations

C\*g(n)

1. Big Oh (O)

C\*f(n)

F(n) <= c g(n)

n>= no

c>0, no >=1

therefore, f(n) = O(g(n))

i.e., f(n)< g(n)

Examples

F(n) = 3n+2

G(n) = n

Conditions:  
F(n) <= c g(n)

n>= no

c>0, no >=1

3n+2 <= c g(n)

C=4

Therefore, 3n+2 < 4n

i.e., n>= 2.

Now, since: f(n) < g(n)

f(n) < g(n^2)