

KING SAUD UNIVERSITY  
COLLEGE OF APPLIED STUDIES AND COMMUNITY SERVICE  
GC211(Data Structures)  
Tutorial 3

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### Question 1:

Find the running time as a function  $F(n)$  Express the growth rate of the function in Big O notation.

a)

```
var M = A[ 0 ];           1

for ( var i = 0; i < n; ++i ) {   n+1
  if ( A[ i ] >= M ) {           n
    M = A[ i ];                 n
  }
}
```

$F(n) = \dots 3n+2 \dots$

Big-O =  $\dots O(n) \dots$

b)

```
X=0;           1

for (i = -2; i < n; ++i ) {   n+3
  x=x+i;                 n+2
  x=x+2;                 n+2
}
Print(x);           1
}
```

$F(n) = \dots 3n+9 \dots$

Big-O =  $\dots O(n) \dots$