

1)

a)  $f = \theta(g)$

b)  $f = O(g)$

c)  $f = \Omega(g)$

d)  $f = \theta(g)$

e)  $f = \theta(g)$

f)  $f = \theta(g)$

m)  $f = \Omega(g)$

2)

3)

a)

```
def fibonacci(n): O(n^3)
```

```
    if n == 0 or n == 1 or n == 2: c
```

```
        return 1
```

```
    return fibonacci(n-1) + fibonacci(n-2) * fibonacci(n-3) O(n^3)
```

b)

```
def linearFib(n): O(n)
```

```
    if n <= 2: return 1          base case    c
```

```
    f = array of size n+1        array        c
```

```
    f[0] = 1; f[1] = 1; f[2] = 1  set values   c
```

```
    for i = 3 to n                loop        (n-2)
```

```
        f[i] = f[i-1] + f[i-2] * f[i-3]  calculation  c
```

```
    return f[n]
```

```
    return
```