

1. (Asymptotic analysis)

Answer.

a) $f(n) = \Theta(g(n))$

b) $f(n) = \omega(g(n))$

c) $f(n) = \omega(g(n))$

d) $f(n) = \omega(g(n))$

2. (Master method/Recursion tree)

Answer.

a) $\Theta(n \lg n)$

[Students need to show detailed steps.]

b) $\Theta(n^2)$

[Students need to show detailed steps.]