

HW1**1.)**

a.) $g(n) = O(n^2)$

b.) $h(n) = \Omega(n!)$

c.) $k(n) = \Theta(\log n)$

d.) $m(n) = \Theta(1)$

e.) $m(n), k(n), f(n), h(n)$

f.) $g(n)$ is worst-case scenario (upper bound), while the rest are not. It is somewhat of an unfair comparison to compare an upper bound of a function to the lower bounds or tight bounds of other functions.

g.) $p(n) = O(n^2)$

2.)

a.) $\Theta(n^2)$

b.) $\Theta(n^2)$

c.) $\Theta(b) = \Theta(\log n)$

3.)**4.)****5.)****a.)**