Algorithms (COT 6405): Assignment 4

Due date: September 18 (Thursday)

Problem 1 (5 points)
Give an example of functions $f(n)$ and $g(n)$ that satisfy all of the following conditions:

$$f(n) = O(g(n))$$
$$f(n) \neq \Theta(g(n))$$
$$f(n) \neq o(g(n))$$

Problem 2 (5 points)
Prove the following transitivity property of asymptotic bounds:

if $f(n) = \Theta(g(n))$ and $g(n) = \Theta(h(n))$, then $f(n) = \Theta(h(n))$.