Algorithms: Assignment 4

Due date: September 18 (Wednesday)

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)
Give a precise mathematical proof of the following asymptotic bounds:

(a) $\sqrt{n} = o(n)$

(b) for any constant $a > 0$,
$(n+1)^a = \Theta(n^a)$