Algorithms (COT 6405): Assignment 5

Due date: September 25 (Thursday)

Problem 1 (10 points)
Determine asymptotically tight bounds (Θ-notation) for each of the following recurrences, and show the derivation of your bounds:

(a) $T(n) = T(n/6) + T(n/3) + T(n/2) + n$.

(b) $T(n) = T(n-1) + n$.

(c) $T(n) = T(n-1) + 1/2^n$.

(d) $T(n) = T(\sqrt{n}) + 1$.

(e) $T(n) = \sqrt{n} \cdot T(\sqrt{n}) + n$.