

COSC 4111/5111 — Winter 2013

Posted: March 17, 2013

Due: April 8, 2013

Problem Set No. 3



ERRATUM.



The Problem #(2) in Assignment #3 reads as follows:

- (2) Is the “proof” given below for the **above question** correct? If not, where exactly does it go wrong?

Proof. Let $y = f(\vec{x}_n)$ be r.e. Then $y = f(\vec{x}_n) \equiv \psi(y, \vec{x}_n) = 0$ for some $\psi \in \mathcal{P}$. Thus $g = \lambda \vec{x}_n. (\mu y) \psi(y, \vec{x}_n)$ is in \mathcal{P} . But $g = f$, since the unbounded search finds the y that makes $y = f(\vec{x}_n)$ true, if $f(\vec{x}_n) \downarrow$. Thus, $f \in \mathcal{P}$. \square

Replace the part “**above question**” with “**the theorem, proved in class/text, if $y = f(\vec{x})$ is semi-recursive, then $f \in \mathcal{P}$** ”