Logic and Computation II, Spring 2023

Homework No.16

Name:

Problem 1

Show that if R, S are $\Sigma_3(\xi)$ sets, so is $R \cap S$.

Show that if R is defined by a $\Sigma_3(\xi)$-formula φ, so is the set defined by $\forall y < z \varphi$.

Solution:

Problem 2

Prove the theorem in Page 22 by using the last lemma in page 20 of lecture06-01.

Solution:

Problem 3
Show that $K^c \leq_m K$ does not hold.

Solution:

Problem 4
Show that $\{n : K(n) < n\}$ is a simple set.

Solution:

Problem 5

If $A \leq_{\mathrm{m}} B$ and A is productive, show that B is also productive.

<u>Solution:</u>