MLCS - Homework 3

Michele Conti
1599133

1 Computable, c.e. and not computable Problems

Exercise 1.2. Show by informal arguments the following points.

(1) If $L_1 \cap L_2$ is not computable and L_2 is computable then L_1 is not computable.

(2) If $L_1 \cup L_2$ is not computable and L_2 is computable then L_1 is not computable.

(3) If $L_1 \setminus L_2$ is not computable and L_2 is computable then L_1 is not computable.

(4) If $L_2 \setminus L_1$ is not computable and L_2 is computable then L_1 is not computable.

(5) If L_1 and L_2 are computably enumerable then $L_1 \cup L_2$ and $L_1 \cap L_2$ are computably enumerable.

Solution.

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2 *NP* problems