COMP170 Spring 2018 Recitation 4

Problem 1
We know from class that the language $EMPTY$ defined below is undecidable. Is it recognizable? Prove why or why not. Is the complement recognizable? Prove why or why not.

$$EMPTY = \{ \langle M \rangle \mid M \text{ accepts nothing} \}$$

Problem 2
Prove the language $L$ defined below is undecidable. Is it recognizable? Prove why or why not. Is the complement recognizable? Prove why or why not.

$$L = \{ \langle M \rangle \mid M \text{ accepts at least one of the following strings: “101”, “001”, “111”} \}$$