Consider the language $M$ of all binary strings with equal numbers of 0's and 1's.

(a) Provide an infinite set of strings that are pairwise distinguishable with respect to $M$.

For example, \{\epsilon, 0, 00, 000, 0000, \ldots\}

(b) Provide an infinite set of strings that are pairwise indistinguishable with respect to $M$.

For example, \{\epsilon, 01, 0011, 000111, \ldots\}

(c) Is the complement of $M$ regular or not? Justify your answer.

No. Regular languages are closed under complementation.