*Prove that the set of all regular languages is countable.

Ans:- The language that has a regular expression always represents a regular language.

Every regular expression is finite, so we have some length 'l'. Let R_l be a set of regular expression of length l.

Every set R_l is finite.

The set of all regular expressions is just the union of all the R_l and therefore it is countable union of finite sets

so, it is countable.