

Problem 0(a)

Remark (Why $\mathcal{P}(A)$ is called the power set). *The power set of some set is so-called as the set resulting from the power set construction operation has a cardinality equal to 2 exponentiated to the power of the cardinality of the set on which the power set operation is performed. Symbolically, that is (given a set A):*

$$|\mathcal{P}(A)| = 2^{|A|}$$