

Power Set.

$$A = \{1, 2, 3\}$$

(1)

Soln,

$$\{1\}, \{2\}, \{3\}, \{1, 2\}, \{1, 3\}, \{2, 3\}$$

$$\{1, 2, 3\} = A, \emptyset$$

The power set is denoted by $P(A)$. In this

Case

$$P(A) = \{ \{1\}, \{2\}, \{3\}, \{1, 2\}, \{1, 3\}, \{2, 3\}, \{1, 2, 3\}, \emptyset \}$$

$$A = \{1, 2, 3, 4\}$$

The number of ~~me~~ elements of a set is called the cardinality of the set. This is denoted by

$$|A|$$

$$|P(A)| = 16.$$

Proposition Prove ^{if} $A \subseteq B$ & $B \subseteq C$ then $A \subseteq C$.

Proof: Let $x \in A$ be arbitrary element of A .

Since $A \subseteq B$ so $x \in B$. Also as $B \subseteq C$ so

$x \in C$.

□