

Let $E = \{a, b\}$. Find $P(P(E))$

$$P(E) = \{\emptyset, \{a\}, \{b\}, \{a, b\}\}$$

$$P(P(E)) = \{\emptyset, \{\emptyset\}, \{\{a\}\}, \{\{b\}\}, \{\{a, b\}\}, \{\{a\}, \{b\}\}, \{\{a\}, \{a, b\}\}, \{\{b\}, \{a, b\}\}, \{\{a\}, \{b\}, \{a, b\}\}, \{\{a\}, \emptyset\}, \{\{b\}, \emptyset\}, \{\{a, b\}, \emptyset\}, \{\{a\}, \{a, b\}, \emptyset\}, \{\{b\}, \{a, b\}, \emptyset\}, \{\{a\}, \{b\}, \emptyset\}, \{\{a\}, \{b\}, \{a, b\}, \emptyset\}\}$$