Consider the set $A = \{1, 2, 3, 4, 5\}$. Which of the following is true about the powerset $\mathscr{P}(A)$? (Only one is true.)

$\{3\} \in \mathscr{P}(A)$

$3 \in \mathscr{P}(A)$

$\{3\} \subseteq \mathscr{P}(A)$

$3 \subseteq \mathscr{P}(A)$

$$A = \{a, b, c\} \qquad \mathscr{P}(A) = \{\{a, b, c\}, \{a, b\}, \{a, c\}, \{a\} \{b, c\}, \{b\}, \{c\}, \emptyset\}$$

$$A - \{a\} = \{b, c\} \qquad \mathscr{P}(A - \{a\}) = \{\{b, c\}, \{b\}, \{c\}, \emptyset\}$$

$$\{\{a\} \cup C \mid C \in \mathscr{P}(A - \{a\})\} = \{\{a, b, c\}, \{a, b\}, \{a, c\}, \{a\}\}$$

$$\mathscr{P}(A) = \{\{a, b, c\}, \{a, b\}, \{a, c\}, \{a\} \{b, c\}, \{b\}, \{c\}, \emptyset\} = \{\{a\} \cup C \mid C \in \mathscr{P}(A - \{a\})\} \cup \mathscr{P}(A - \{a\})$$