

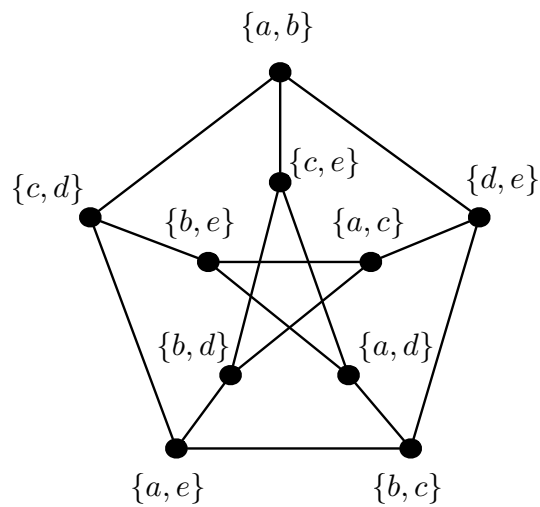
► **Review Exercise 9-16**

Let $S = \{a, b, c, d, e\}$ and let V be the set of 2-element subset of S . Let G be the graph whose vertices set is V and where, for $A, B \in V$, AB is an edge if and only if $A \cap B = \emptyset$. Show that G is isomorphic to the Petersen graph.

Solution. By the definition,

$$V = \{\{a, b\}, \{a, c\}, \{a, d\}, \{a, e\}, \{b, c\}, \{b, d\}, \{b, e\}, \{c, d\}, \{c, e\}, \{d, e\}\}.$$

Thus, G contains 10 vertices. The labels shows that the graph is isomorphic to the Petersen graph.



□