

Prove the following Boolean identities:

(a) $\bar{A} \bullet B + A \bullet \bar{B} + A \bullet B + \bar{A} \bullet \bar{B} = 1$

(b) $\bar{A} \bullet \bar{B} + A \bullet B + \bar{A} \bullet B = \bar{A} + B$

(c) $\bar{A} + A \bullet B + A \bullet \bar{C} + A \bullet \bar{B} \bullet \bar{C} = \bar{A} + B + \bar{C}$

(d) $\bar{A} \bullet B \bullet C + \bar{A} \bullet B \bullet \bar{C} + A \bullet C = \bar{A} \bullet B + A \bullet C$

(e) $A + A \bullet B = A$

(f) $A \bullet (A + B) = A$