

Expressions for Switches

When implementing expression using switches, it is helpful to have the expression in a form where only inputs are complemented. For each expression below, use DeMorgan's theorem to obtain an equivalent expression which contains ANDs and ORs of the inputs (e.g., A) and their complements (e.g., \bar{A}). There should be **no complements (bars)** in the final expression except those over the inputs.

Part A $Out_1 = \overline{A(B+C)} + (D\bar{E}F)$

$$Out_1 = (\bar{A} + B + C)(\bar{D} + E + \bar{F})$$

Part B $Out_2 = \overline{\overline{(\bar{A} + B) + C} + (D + \overline{E + \bar{F}})}$

$$Out_2 = (A\bar{B} + C)(D + \bar{E}F)$$