

10/11 X

$$\begin{array}{c} \text{CC'} \\ \text{DD'} \end{array} \quad \begin{array}{c} \text{B}', \text{D}' \\ \text{B}', \text{C}' \end{array} \quad \begin{array}{c} \text{BD}, \\ \text{BC}' \end{array}$$

$$\text{B}'\text{C}'\text{D}' + \text{B}'\text{C}' + \text{B}'\text{C}\text{D}' + \text{B}'\text{C}'\text{D}' + \text{BCD}'$$

~~BCD'~~

$$\begin{aligned} & \text{B}'\text{C}'\text{D}' + \text{CD}' + \text{AC}' \\ & (\text{B}' + \text{C}' + \text{D}') * (\text{C}' + \text{D}')(\text{A}' + \text{C}') \\ & (\text{D}' + \text{C}'(\text{B}' + \text{C}'))(\text{A}' + \text{C}') \\ & (\text{D}' + \text{B}'\text{C}')(\text{A}' + \text{C}') \\ & \text{AD}' + \text{C}'\text{D}' + \text{AB}'\text{C}' \\ & \text{F}_a = (\text{A}' + \text{B}' + \text{C})(\text{A} + \text{D})(\text{C} + \text{D}') \end{aligned}$$

$$\begin{aligned} F_b &= (\text{B}' + \text{C}' + \text{D})(\text{B}' + \text{C}' + \text{D}) \\ &= \cancel{\text{B}' + \text{C}' + \text{D}}(\text{C}' + \text{D}) \\ &= \cancel{(\text{C}' + \text{B}' + \text{D})(\text{B}' + \text{D})}(\text{B}' + \text{C}' + \text{D}) \\ &= \cancel{\text{C}' + \text{BD} + \text{B}'\text{D}'} \\ &= \cancel{(\text{C}' + \text{B}' \equiv \text{D})(\text{B}' + \text{C}' + \text{D})} \\ &= (\text{B}' \equiv \text{D})(\text{B}'\text{C}' + \text{CD}') \end{aligned}$$

$$\begin{aligned} & (\text{A}' + \text{B}' + \text{C}' + \text{D})(\text{B}' + \text{C}' + \text{D}') \\ & (\text{C}' + (\text{B}' + \text{D})(\text{A}' + \text{B}' + \text{D})) \\ & \text{C}' + \text{AB} + \text{BD} + \text{AD}' + \text{BD}' \\ & \text{AB} + \text{AD}' + \text{BD}' + \text{C} \\ & F_a = \text{AB} + \text{AD}' + \text{C} \end{aligned}$$

$$\begin{array}{c} \text{AB} \\ \text{AD}' \\ \text{CD}' \end{array} \quad 3$$

$$\begin{aligned} & (\text{A}' + \text{B}' + \text{C})(\text{A}' + \text{D})(\text{C} + \text{D}') \\ & (\text{A}' + \text{B}' + \text{C})(\text{D}' + \text{AC}) \\ & \cancel{\text{AD}' + \text{BD}' + \text{CD}' + \text{AC}' \cancel{\text{B}'\text{C}' + \text{CD}'}} \\ & (\text{A}' + \text{D}'(\text{B}' + \text{C}'))(\text{C} + \text{D}') \\ & (\text{A}' + \text{BD}' + \text{CD}')( \text{C} + \text{D}') \\ & \text{F}_a = \text{AB} + \text{AD}' + \text{C} \end{aligned}$$

$$\begin{aligned} & \text{B}'\text{C}'\text{D}' \\ & (\text{B}' + \text{C}')( \text{C}' + \text{D}) \\ & \text{C}' + \text{BD} \\ & \text{C}'(\text{B}' + \text{D}') \\ & \cancel{(\text{B}' + \text{C}' + \text{BD}' + \text{CD}')} \end{aligned}$$

$$\begin{aligned} & \cancel{\text{B}'\text{C}' + \text{BD}'} + \cancel{\text{CD}'} \\ & (\text{B}' + \text{C})(\text{B}' + \text{C}' + \text{D}') \\ & (\text{B}' + \text{C}' + \text{BD}' + \text{CD}') \\ & \text{B}'\text{C}' + \text{BD}' + \text{CD}' \\ & (\text{B}' + \text{C}' + \text{BD}' + \text{CD}') \end{aligned}$$

$$\begin{aligned} & \text{A}' + \text{B}'(\text{C}' + \text{D}') + \text{C}'\text{D}' \\ & \text{A}' + \text{B}'(\text{C}'\text{D}') + \text{C}'\text{D}' \end{aligned}$$