

as,  $x + x'y = x + y$  — (i)

1)

$$A + A'BC + A'B'D' + A'DC$$

$$= A + BC + A'B'D' + A'DC$$

$$= BC + \underline{A + A'B'D'} + A'DC$$

commutative law — (i)

$$= BC + A + B'D' + A'DC$$

$$= BC + B'D' + \underline{A + A'DC}$$

(i)

$$= BC + B'D' + A + CD$$

$$= BC + CD + B'D' + A$$

$$= C(B + D) + B'D' + A$$

$$= C \overline{B' \cdot D'} + B'D' + A$$

De Morgan

$$= B' \cdot D' + C + A$$

$$= (B + D)' + C + A$$

