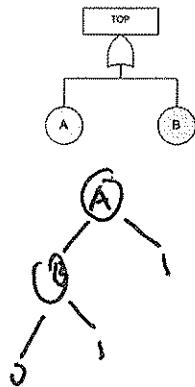


Birnbaum's Measure

- Example

- Consider the fault tree of a two-component series system, find the $I^{BM}(A)$ and $I^{BM}(B)$?



$$U_{sys} = q_A + (1 - q_A) \cdot q_B$$

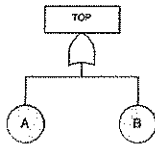
$$I(A) = \frac{\partial U_{sys}}{\partial q_A} = 1 - q_B$$

$$I(B) = \frac{\partial U_{sys}}{\partial q_B} = 1 - q_A$$

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Hands-On Problem (revisit)

- Consider the fault tree of a two-component series system, find the $I^{BM}(A)$ and $I^{BM}(B)$?



$$U_{sys} = Q(q) = q_A + (1 - q_A) \cdot q_B$$

$$I(A) = Q(1_A, q) - Q(0_A, q)$$

$$= 1 - q_B$$

$$I(B) = Q(1_B, q) - Q(0_B, q)$$

$$= 1 - q_A$$

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