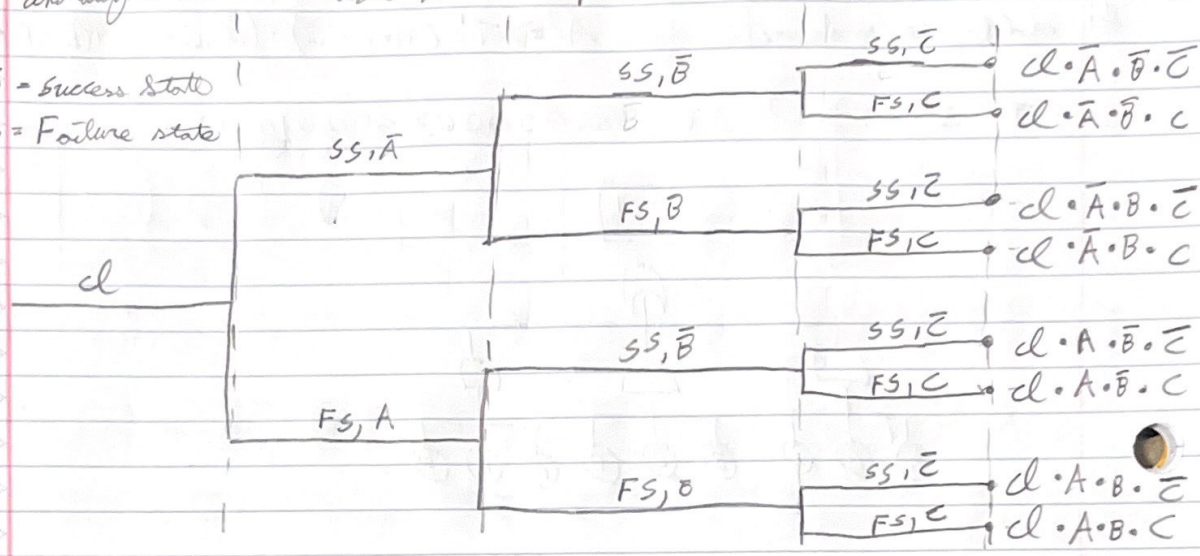
HW #29

$P(I) = 10^{-2}$

Emergency safety features: $P(A) = 10^{-2}$, $P(B) = 10^{-3}$, $P(C) = 10^{-4}$

a) Initiating Event | Part A | Part B | Part C | Accident Seq.

* SS - Success State
* FS = Failure state



b) $P(I)P(\bar{A})P(\bar{B})P(\bar{C}) = 9.889e-4 \approx P(I) = 1e-3$

$P(I)P(\bar{A})P(\bar{B})P(C) = 9.889e-8 \approx P(I)P(C) = 1e-7$

$P(I)P(\bar{A})P(B)P(\bar{C}) = 9.889e-7 \approx P(I)P(B) = 1e-6$

$P(I)P(\bar{A})P(B)P(C) = 9.9e-11 \approx P(I)P(B)P(C) = 1e-10$

$P(I)P(A)P(\bar{B})P(\bar{C}) = 9.989e-6 \approx P(I)P(A) = 1e-5$

$P(I)P(A)P(\bar{B})P(C) = 9.99e-10 \approx P(I)P(A)P(C) = 1e-9$

$P(I)P(A)P(B)P(\bar{C}) = 9.999e-9 \approx P(I)P(A)P(B) = 1e-8$

$P(I)P(A)P(B)P(C) = 1e-12$

HW #29

4) possibilistic event tree

$\pi(d) = 10^{-3}$, $\pi(A) = 10^{-2}$, $\pi(B) = 10^{-3}$, $\pi(C) = 10^{-4}$

$\pi(d)\pi(\bar{A})\pi(\bar{B})\pi(\bar{C}) = \min(\pi[d, \bar{A}, \bar{B}, \bar{C}]) = \pi(d) = 10^{-3}$
$\pi(d)\pi(\bar{A})\pi(\bar{B})\pi(C) = \min(\pi[d, \bar{A}, \bar{B}, C]) = \pi(C) = 10^{-4}$

$\pi(d)\pi(\bar{A})\pi(B)\pi(\bar{C}) = \min(\pi[d, \bar{A}, B, \bar{C}]) = \pi(B|d) = 10^{-3}$
$\pi(d)\pi(\bar{A})\pi(B)\pi(C) = \min(\pi[d, \bar{A}, B, C]) = \pi(C) = 10^{-4}$

$\pi(d)\pi(A)\pi(\bar{B})\pi(\bar{C}) = \min(\pi[d, A, \bar{B}, \bar{C}]) = \pi(d) = 10^{-3}$
$\pi(d)\pi(A)\pi(\bar{B})\pi(C) = \min(\pi[d, A, \bar{B}, C]) = \pi(C) = 10^{-4}$

$\pi(d)\pi(A)\pi(B)\pi(\bar{C}) = \min(\pi[d, A, B, \bar{C}]) = \pi(B|d) = 10^{-3}$
$\pi(d)\pi(A)\pi(B)\pi(C) = \min(\pi[d, A, B, C]) = \pi(C) = 10^{-4}$

$P(A,B) = 10^{-4}$, $P(d) = 10^{-5}$

Accident Seq.	Probabilistic	Possibilistic
$P(d)$	1e-5	1e-5
$P(d)P(A)$	1e-9	1e-5
$P(d)P(B)$	1e-9	1e-5
$P(d)P(A)P(B)$	1e-13	1e-5