

$$(p \vee q) \wedge r$$

p	q	r	$(p \vee q) \wedge r$
0	0	0	0
0	0	1	0
0	1	0	0
0	1	1	1
1	0	0	0
1	0	1	1
1	1	0	0
1	1	1	1

$$S = (p \vee q) \wedge r \quad [3T, 5F]$$

$$A = p, q, r$$

$$E(S) = -\frac{5}{8} \log\left(\frac{5}{8}\right) - \frac{3}{8} \log\left(\frac{3}{8}\right) = 0.2868$$

$$P \left\{ \begin{array}{l} E(S_{a=T}) = -\frac{1}{2} \log\left(\frac{1}{2}\right) - \frac{1}{2} \log\left(\frac{1}{2}\right) = 0.3 \\ E(S_{a=F}) = -\frac{3}{4} \log\left(\frac{3}{4}\right) - \frac{1}{4} \log\left(\frac{1}{4}\right) = 0.24 \\ G(S, a) = 0.2868 - \frac{4}{8} \times 0.3 - \frac{4}{8} \times 0.24 = 0.016 \end{array} \right.$$

2/3

①

$$\begin{aligned}
 q \left\{ \begin{aligned}
 E(S_{a=T}) &= -\frac{1}{2} \log\left(\frac{1}{2}\right) - \frac{1}{2} \log\left(\frac{1}{2}\right) = 0.3 \\
 E(S_{a=F}) &= -\frac{3}{74} \log\left(\frac{3}{4}\right) - \frac{1}{4} \log\left(\frac{1}{4}\right) = 0.24 \\
 G(S_a) &= 0.2868 - \frac{4}{8} \times 0.3 - \frac{4}{8} \times 0.24 = 0.016
 \end{aligned}
 \right.
 \end{aligned}$$

$$\begin{aligned}
 r \left\{ \begin{aligned}
 E(S_{a=T}) &= -\frac{1}{4} (\log\left(\frac{1}{4}\right)) - \frac{3}{4} \log\left(\frac{3}{4}\right) = 0.24 \\
 E(S_{a=F}) &= \log(1) = 0 \\
 G(S_a) &= 0.2868 - 0.24 \times \frac{4}{8} = \underline{0.164}
 \end{aligned}
 \right.
 \end{aligned}$$



r is selected

$$S = (P \vee q) \wedge T \quad [3^T, 1^F]$$

$$A = P, q$$

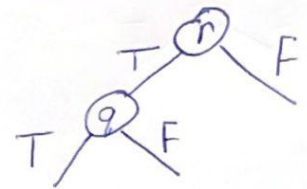
$$E(S) = \frac{1}{4} \log\left(\frac{1}{4}\right) - \frac{3}{4} \log\left(\frac{3}{4}\right) = 0.24$$

$$\begin{aligned}
 p \left\{ \begin{aligned}
 E(S_{a=T}) &= 0 - \log(1) = 0 \\
 E(S_{a=F}) &= \frac{1}{2} \log\left(\frac{1}{2}\right) - \frac{1}{2} (\log\left(\frac{1}{2}\right)) = 0.3 \\
 G(S_a) &= 0.24 - \frac{2}{4} \times 0 - \frac{2}{4} \times 0.3 = 0.09
 \end{aligned}
 \right.
 \end{aligned}$$

(2)

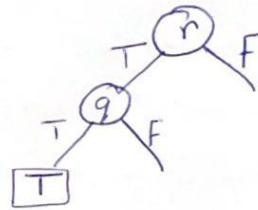
$$\begin{cases}
 E(S_{a=T}) = 0 - \log(1) = 0 \\
 E(S_{a=F}) = \frac{1}{2} \log\left(\frac{1}{2}\right) - \frac{1}{2} \log\left(\frac{1}{2}\right) = 0.3 \\
 G(S, a) = 0.24 - \frac{2}{4} \times 0 - \frac{2}{4} \times 0.3 = \underline{0.09}
 \end{cases}$$

G for p and q are equal so one of them are choosed.



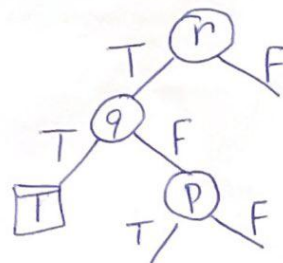
$$S = (p \vee T) \wedge T \quad [2T, 0F]$$

There are 0F in S \Rightarrow



$$S = (p \vee F) \wedge T \quad [1T, 1F]$$

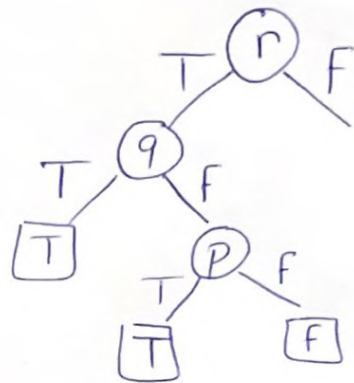
~~E~~ A=P There is only one element in A



(3)

$$S = (F \vee F) \wedge T \quad [0T, 1F]$$

$$S = (T \vee F) \wedge T \quad [1T, 0F]$$



$$S = (P \vee q) \wedge F \quad [0T, 4F]$$

