(1.) $P\left(+ \middle| \begin{matrix} A_1=T \\ A_2=F \\ A_3=T \end{matrix}\right) = \dfrac{P\left(\begin{matrix} A_1=T \\ A_2=F \\ A_3=T \end{matrix} \middle| +\right) * P(+)}{P\left(\begin{matrix} A_1=T \\ A_2=F \\ A_3=T \end{matrix}\right)}$

Based on Bayes theorem only one may be known and the probability of other ~~notes~~ may not be estimated mathematically - To address the scenario we creat a compliment of the above scenario or a negative - And compare which is bigger based on a Naive Bayes learning which ever is bigger in value of the positive or negative is valid.

$P\left(+ \middle| \begin{matrix} A_1=T \\ A_2=F \\ A_3=T \end{matrix}\right), \quad P\left(- \middle| \begin{matrix} A_1=T \\ A_2=F \\ A_3=T \end{matrix}\right)$

Using Naive Bayes learning assumption all the descriptive are Indepedent

$P(\mathcal{E}_1 \mathcal{E}_2 \mathcal{E}_3) = P(\mathcal{E}_1) \times P(\mathcal{E}_2) \times P(\mathcal{E}_3) \ldots\ldots \times P(\mathcal{E}_n)$

$\alpha \; P(A_1=T|+) \times P(A_2=F|+) \times P(A_3=T|+)$

$0/2 \times 1/2 \times 1/2 \times 2/6$ Applying laplace smoothing

$\frac{0+1}{2+3} \times \frac{1+1}{2+3} \times \frac{1+1}{2+3} = 1/5 * \frac{2}{5} \times \frac{2}{5} = \frac{2}{125} \times 2/6$

$\alpha \; (A_2=T|-) \times P(A_2=F|-) \times P(A_3=T|-) \times \frac{n(-)}{n(s)}$

$2/4 \times 2/4 \times 1/3 \times 4/6 = 1/2 \times 1/2 \times 1/3 \times 4/6 =$

Valid - $P\left(- \middle| \begin{matrix} A_2 T \\ A_2=F \\ A_3=T \end{matrix}\right) > P\left(+ \middle| \begin{matrix} A_1=F \\ A_2=F \\ A_3=T \end{matrix}\right)$