

$$\begin{aligned}
P(1,1) &= P(1,1|-)P(-) + P(1,1|+)P(+) \\
&= P(A=1|-)P(B=1|-)P(-) \\
&\quad + P(A=1|+)P(B=1|+)P(+) \\
&= \frac{1}{2} \cdot 1 \cdot \frac{2}{5} + \frac{2}{3} \cdot \frac{2}{3} \cdot \frac{3}{5} \\
&= \frac{1}{3} + \frac{4}{15} = \frac{7}{15}
\end{aligned}$$

$$\begin{aligned}
P(-|A=1, B=1) &= \frac{P(1,1|-)P(-)}{P(1,1)} \\
&= \frac{\frac{1}{2} \cdot 1 \cdot \frac{2}{5}}{\frac{7}{15}} = \frac{1}{5} \cdot \frac{15}{7} \\
&= \frac{3}{7}
\end{aligned}$$

$$\begin{aligned}
P(+|A=1, B=1) &= \frac{P(1,1|+)P(+)}{P(1,1)} \\
&= \frac{\frac{2}{3} \cdot \frac{2}{3} \cdot \frac{3}{5}}{\frac{7}{15}}
\end{aligned}$$

$$= \frac{4}{\cancel{15}} \cdot \frac{\cancel{15}}{7} = \frac{4}{7}$$

$$\therefore P(+1, 1) > P(-1, 1) \quad \therefore T = +$$