T13 原问题等价于在一条线段上选两个点，两个点位于线段$(\frac{1}{4},\frac{1}{2})$处和$(\frac{1}{2},\frac{3}{4})$处，设为事件A

$P(A)=\frac{1}{4}$

T14 $P(B|A)=\frac{P(AB)}{P(A)}=\frac{P(B)-P(B-AB)}{P(AUB)-(B-A))}=\frac{P(B)-P(B-A)}{P(AUB)-P(B-A)}=\frac{4}{25}$

T15 $P(\bar{A}\bar{B})=P(\overline{AUB})=1-P(AUB)=1-(P(A)+P(B)-P(AB))$

$P(B)=\frac{P(A)P(B|A)}{P(A|B)}=\frac{\frac{1}{4}\cdot\frac{1}{3}}{\frac{1}{2}}=\frac{1}{6}$ $P(AB)=P(A)\cdot P(B|A)=\frac{1}{12}$

代入. $P(\bar{A}\bar{B})=1-(\frac{1}{4}+\frac{1}{6}-\frac{1}{12})=\frac{2}{3}$

T16 设第一次出为事件A，两次都是次品为事件B

$P(B|A)=\frac{P(AB)}{P(A)}=\frac{P(B)}{P(A)}=\frac{\frac{C_4^2}{C_{10}^2}}{1-\frac{C_6^2}{C_{10}^2}}=\frac{\frac{2}{15}}{\frac{2}{3}}=\frac{1}{5}$

T17 ① $P(A|B)=\frac{P(AB)}{P(B)}=\frac{P(A)+P(B)-P(AUB)}{P(B)}\geq\frac{P(A)+P(B)-1}{P(B)}=\frac{a+b-1}{b}$

② $P(A|B)+P(A|\bar{B})=\frac{P(AB)}{P(B)}+\frac{P(A\bar{B})}{P(\bar{B})}=\frac{P(AB)}{P(B)}+\frac{1+P(AB)}{P(\bar{B})}-\frac{P(A)+P(B)}{P(B)}$

$=\frac{P(B)(1-P(B))+P(AB)-P(A)P(B)}{P(B)(1-P(B))}=1$ $\therefore P(AB)=P(A)P(B)$

即A与B独立.

T18 ① $P(次)=\frac{25}{100}\times\frac{5}{100}+\frac{35}{100}\times\frac{4}{100}+\frac{40}{100}\times\frac{2}{100}=3.45\%=0$

② $P(甲|次)\ \frac{P(A)\cdot P(次|甲)}{P(次)}=\frac{\frac{25}{100}\times\frac{5}{100}}{\frac{345}{10000}}=\frac{25}{69}=0.362$