

$$\left(Z_{1-\frac{\alpha}{2}} - \bar{X}_1 \cdot \frac{\sigma}{\sqrt{n}}, Z_{1+\frac{\alpha}{2}} + \bar{X}_1 \cdot \frac{\sigma}{\sqrt{n}} \right)$$

$$\alpha = 5\% \rightarrow Z_{1-\frac{\alpha}{2}} = Z_{0.975} = 1.96$$

$$\left(\frac{372}{500} - 1.96 \cdot \frac{\hat{se}}{\sqrt{n}}, \frac{372}{500} + 1.96 \cdot \frac{\hat{se}}{\sqrt{n}} \right)$$

$$\left(0.70575, 0.78225 \right)$$

$$\frac{1}{\sqrt{2\pi}\sigma^2} \exp\left(-\frac{(z-\mu)^2}{2\sigma^2}\right)$$

$$\left(0, \frac{(n-1)S_n^2}{\chi_{n-1,\alpha}^2} \right)$$

$$\begin{aligned} 1. \quad & P(A) = 0.1 & P(TL|A) &= 0.5 \\ & P(F) = 0.7 & P(TL|F) &= 0.1 \\ & P(V) = 0.2 & P(TL|V) &= 0.4 \end{aligned}$$

$$\begin{aligned} P(TL \cap A) &= 0.05 \rightarrow P(A|TL) = \frac{0.05}{0.2} \\ P(TL \cap F) &= 0.07 \rightarrow P(F|TL) = \frac{0.07}{0.02} \\ P(TL \cap V) &= 0.08 \rightarrow P(V|TL) = \frac{0.08}{0.02} \end{aligned}$$

$$P(TL) = P(A) \cdot P(TL|A) + \dots = 0.2 = 20\%$$

$$P(\text{Auto} | \text{Te laat}) < P(\text{Fiets} | \text{Te laat}) < P(\text{Te voet} | \text{Te laat})$$

in deze richt.

$$\begin{aligned} 2. \quad & P(R_1) = \frac{1}{2} = 0.5 \\ & P(R_1|R_2) = \frac{P(R_1 \cap R_2)}{P(R_2)} = \frac{1/6}{1/2} = \frac{1}{3} = 0.33 \\ & P(R_1|R_2 \cup R_3) = \frac{P(R_1 \cap (R_2 \cup R_3))}{P(R_2 \cup R_3)} \end{aligned}$$

$$= \frac{1/3}{5/6} = \frac{2}{5} = 0.4$$

$$P(R_2 \cup R_3) = P(R_2) + P(R_3) - P(R_2 \cap R_3)$$

$$= \frac{1}{2} + \frac{1}{2} - \frac{1}{6} = \frac{5}{6}$$

$$P(R_1 \cap (R_2 \cup R_3)) = P(R_1) + P(R_2 \cup R_3) - P(R_1 \cup R_2 \cup R_3)$$

$$P(R_1) > P(R_1|R_2 \cup R_3) > P(R_1|R_2)$$

$$= \frac{2}{6} = \frac{1}{3}$$

$$\begin{aligned} 3. \quad & P(A \cup B \cup C) = P(A) + P(B) + P(C) - P(A \cap B) - P(A \cap C) - P(B \cap C) + P(A \cap B \cap C) \\ & \rightarrow P(A \cap B \cap C) = \frac{1}{3} \end{aligned}$$

a e b d c

$$4. \quad \frac{C_5^2 \cdot 2}{5!} = \frac{5!}{3! \cdot 2} \cdot \frac{2}{5!} = \frac{1}{3!} = \frac{1}{6}$$