

## Innføringslekse kap 3

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Inferensstatistikk kap 3.

$$1 \text{ a) } P(A) + P(B) - P(A \cup B) = \frac{5}{7} - \frac{4}{7} = \frac{1}{7}$$

$$b) P(A|B) = \frac{\frac{2}{7} \cdot \frac{1}{7}}{\frac{4}{7}} = \frac{2}{49} \cdot \frac{7}{4} = \frac{14}{196} = \frac{1}{14}$$

$$c) P(B|A) = \frac{\frac{4}{7} \cdot \frac{1}{7}}{\frac{5}{7}} = \frac{4}{49} \cdot \frac{7}{5} = \frac{14}{98} = \frac{1}{7}$$

$$2 \text{ a) } 4 \cdot 3 \cdot 2 = 24$$

$$b) 4 \cdot 4 \cdot 4 = 64$$

$$3 \text{ a) } \frac{14 \cdot 10}{4 \cdot 4} = \frac{1007 \cdot 210}{735477} = 28,6\%$$

$$b) \frac{14 \cdot 10}{5 \cdot 3} = 22,7\%$$

$$4 \text{ a) } 62 \cdot 62 \cdot 62 = 238328$$

$$b) 62 \cdot 61 \cdot 60 = 226920$$

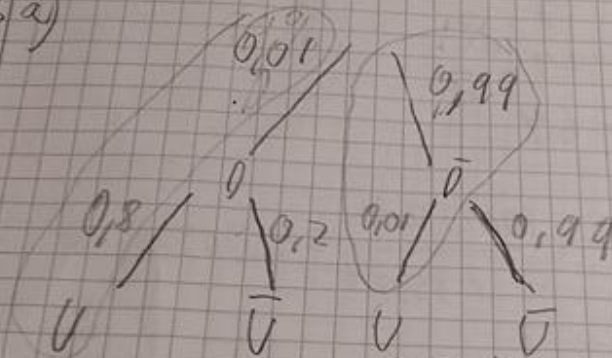
$$c) 26 \cdot 61 \cdot 60 = 95160$$

$$5) 27 \cdot 26 \cdot 25 \cdot 24 \cdot 23 = 96876000$$

$$6) \binom{27}{2} \cdot \binom{25}{2} = 2300$$

$$7) \frac{\binom{17}{3} \cdot \binom{10}{2}}{\binom{27}{5}} = 37,9\%$$

6a)



$$P(\bar{V}|U) = \frac{P(\bar{V}) \cdot P(U|\bar{V})}{P(U)} = \frac{P(\bar{V} \cap U)}{P(U)}$$

$$P(U) = 0,01 \cdot 0,8 + 0,99 \cdot 0,01$$

$$0,008 + 0,0099 = 0,0179$$

$$\frac{0,99 \cdot 0,01}{0,0179} = 55,3\%$$

$$\begin{aligned} 6 \quad & \left( \frac{50}{7} \right) \cdot 0,01^7 \cdot (0,99)^{50-7} = \underline{\underline{36,5\%}} \\ 7 \quad & \frac{1}{16} \cdot \frac{1}{15} \cdot \frac{1}{14} = \frac{1}{3260} \\ 8 \quad & \end{aligned}$$