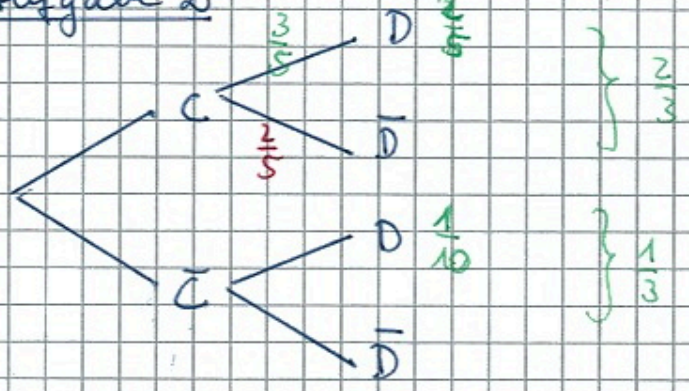
# Abitur 2014 – A2 – STO

## Aufgabe 1

siehe A1

## Aufgabe 2




a) $P(\bar{D}) = P(C \cap \bar{D}) + P(\bar{C} \cap \bar{D})$

$= 1 - P(C \cap D) - P(\bar{C} \cap D)$

$= 1 - \frac{2}{5} - \frac{1}{10} = \frac{5}{10} = \frac{1}{2}$ ∎

b) zu zeigen: $P(C \cap D) \neq P(C) \cdot P(D)$

$P_C(D) = \frac{P(C \cap D)}{P(C)} \Rightarrow P(C) = \frac{P(C \cap D)}{P_C(D)} = \frac{\frac{2}{5}}{\frac{3}{5}} = \frac{2}{3}$

$P(D) = 1 - P(\bar{D}) = \frac{1}{2}$

$P(C) \cdot P(D) = \frac{2}{3} \cdot \frac{1}{2} = \frac{1}{3} \neq \frac{2}{5} = P(C \cap D)$ q.e.d.

c) ges: $P(\bar{C} \cap D)$

$P(C \cap D) = \frac{2}{5}$

$P_C(D) = \frac{3}{5} = \frac{P(D \cap C)}{P(C)} = \frac{\frac{2}{5}}{P(C)} \Rightarrow P(C) = \frac{2}{3}$

$P(C) \cdot P(D) = P(C \cap D)$

$\frac{2}{3} \cdot P(D) = \frac{2}{5} \Rightarrow P(D) = \frac{\frac{2}{5}}{\frac{2}{3}} = \frac{3}{5}$

$P(D) = P(D \cap C) + P(D \cap \bar{C}) = \frac{2}{5} + P(D \cap \bar{C}) = \frac{3}{5}$

$\Rightarrow P(\bar{C} \cap D) = \frac{1}{10}$