EoS - E-tutorial 03 - WiSe 2022/2023

StatRef.E.1.1.00025 (60 Punkte)

Sie haben die folgende Antwort gegeben:

There are two cycle courier companies in the small town of Dark City. The courier service $Extremely\ Expeditious$ employs 44 couriers, who solely wear brown-coloured uniforms. The second courier service $Fairly\ Snappy$ employs only 4 cyclists. Those couriers wear red uniforms. Last Thursday night, at nightfall, a passerby witnessed as a cycle courier ran over a cat. The witness was interrogated by the police. Considering that it was already pitch-black outside as the incident happened, there is a 84 % chance that the witness correctly recognised the colour of the courier's uniform.

You are provided with the following hints:

B: The courier wore a brown uniform.

$\overline{B}$: The courier wore a red uniform.

E: The witness saw a courier in a brown uniform.

$\overline{E}$: The witness saw a courier in a red uniform.

Another hint: Please round your results - if necessary and if not asked otherwise - to **four** decimal places.

a) (10 Points) Please calculate the probability that the courier wore a red uniform. 0.0833

b) (20 Points) Please calculate the probability that the witness saw a courier wearing a brown uniform. 0.7833

c) (30 Points) Please calculate the probability that the courier was indeed wearing a red uniform, given that the witness saw a courier wearing a red uniform. 0.3231

Die bestmögliche Lösung lautet:

There are two cycle courier companies in the small town of Dark City. The courier service $Extremely\ Expeditious$ employs 44 couriers, who solely wear brown-coloured uniforms. The second courier service $Fairly\ Snappy$ employs only 4 cyclists. Those couriers wear red uniforms. Last Thursday night, at nightfall, a passerby witnessed as a cycle courier ran over a cat. The witness was interrogated by the police. Considering that it was already pitch-black outside as the incident happened, there is a 84 % chance that the witness correctly recognised the colour of the courier's uniform.

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Another hint: Please round your results - if necessary and if not asked otherwise - to **four** decimal places.

a) (10 Points) Please calculate the probability that the courier wore a red uniform. 0.0833333333333333

b) (20 Points) Please calculate the probability that the witness saw a courier wearing a brown uniform. 0.783333333333333

c) (30 Points) Please calculate the probability that the courier was indeed wearing a red uniform, given that the witness saw a courier wearing a red uniform. 0.323076923076923

Sie haben 50 von 60 möglichen Punkten erreicht.