

Lecture 9

Small Exercise 1

- 30% of the cars arriving at an intersection make a left turn
- How large is the probability that 2 out of the next 8 cars arriving at the intersection will make a left turn?

 **0.296**

 **0.01**

 **0.007**

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Small Exercise 2

- The average number of cars making a left turn when they arrive at an intersection is 10 cars/hour. Left turns are assumed to occur independently.
- How large is the probability that in the next 30 minutes exactly 5 cars arriving at the intersection will make a left turn?
- What should we consider to solve this question?

 **Poisson process**

 **Gamma distribution**

 **Bernoulli trial**

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Small Exercise 3

- The average number of cars making a left turn when they arrive at an intersection is 10 cars/hour. Left turns are assumed to occur independently.
- How large is the probability that in the next 30 minutes exactly 5 cars arriving at the intersection will make a left turn?

 **0.03**

 **0.5**


 **0.175**

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Small Exercise 4

- The height of a dam is designed such as in the next 3 years it will be able to provide protection against floods with a probability of 0.94.

How large is the return period of the flood based on which the height of the dam has been designed?

 **5 years**

 **50 years**

 **10 years**