

**Exer 12.19****[P/P100]**

To help reduce speeding, the local governments sometimes put up speed signs at locations where speeding is a problem. These signs measure the speed of each passing car and display that speed to the driver. In some countries, such as the UK, the devices are equipped with a camera which records an image of each speeding car and a speeding ticket is sent to the registered owner.

At one location, the data recorded from such a device indicates that between 7 and 10 PM, 32% of cars are speeding and that 4.3 cars per minute pass the intersection, on average.

Which probability distributions can be best used to model each of the following situations for 7 to 10PM?

1. The number of speeding cars in any 1 hour period.

- A Normal
- B Uniform
- C Binomial
- D Poisson
- E Exponential
- F Lognormal

Exer 12.19-1

2. The time that elapses between cars:

- A Normal
- B Uniform
- C Binomial
- D Poisson
- E Exponential
- F Lognormal

Exer 12.19-2

3. Out of 100 successive cars passing the device, the number that are speeding

- A Normal
- B Uniform
- C Binomial
- D Poisson
- E Exponential
- F Lognormal

Exer 12.19-3

4. The mean speed of 100 successive cars passing the device.

- A Normal
- B Uniform
- C Binomial
- D Poisson
- E Exponential
- F Lognormal