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CS 470: Bayesian\_Nets

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**1. Consider the Bayesian network and conditional probability tables shown in Figure 14.2 on page 512. Compute the following:**

(a) The probability that John calls, Mary does not call, the Alarm goes off, that a burglary is occuring, and that no earthquake is occurring.

(b) The probability that John and Mary both call given that a burglary is going on and that no earthquake is happening.

(c)The probability that an alarm is not on given that an earthquake is happening and no burglary is happening.

**2. Draw the Bayesian network associated with the following joint distribution function: P(A,B,C,D)=P(A)P(B|A)P(C|B)P(D|B).**

**3. Draw the Bayesian network associated with the following joint distribution function: P(A,B,C,D)=P(A)P(B)P(C|A,B)P(D|C).**

**4. Create a simple Bayesian network for a problem with at least four variables.**

(a) Draw the network

(b) Specify the conditional probability tables for your network.

(c) Justify the values in your tables.