

Problem Set 1

Due in class April 17, 2008

Problem 1.

Exercise 2.4 from the notes. Be sure to explain your example and how it models a “real world” scenario.

Problem 2.

Exercise 2.5 from the notes.

Problem 3.

Exercise 2.9 from the notes.

Problem 4.

Exercise 2.15 from the notes.

Problem 5.

Exercise 2.16 from the notes. You may assume that exercise 2.14 has already been proven.

Problem 6.

Construct a Bayesian network to describe the operation of a curb-side lemonade stand (like those you might have run as a child). Your variables can be discretized at a coarse level (two or three values each). Include variables representing *traffic*, *amount sold*, *advertising*, *profits*, and *length of time open*. Include at least two more variables of your choosing. Explain the meaning of each variable. Draw the graph of the Bayesian network. Construct reasonable CPTs for each node.