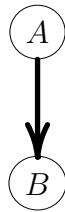# Advanced AI Techniques (WS04)

Exercise sheet 4

Deadline: 11.18.04

Exercise 1 (8 points)

Consider the following Bayes Net structure:

We want to learn the maximum likelihood parameters using the following training data:

case	A	B
1	0	0
2	0	1
3	1	0
4	1	.
5	0	1
6	1	.
7	1	0
8	.	0
9	0	1
10	.	0

Use the EM algorithm to compute the parameters. Initialize the first estimate using complete case analysis and go through the first two iterations of the algorithm (including the third M-step).

Exercise 2 (4 points)

Which of the following DAGs are Markov equivalent (Markov equivalence, see next lecture on 16.11.2004)?