

Exercise 4.1 Bayesian Networks

Instructions: You may discuss this assignment with other students in the class, but you must submit your own answers to the questions below. Include an honor pledge with your submission. Submit online and in PDF. This exercise is ungraded.

1. Show the graph for the following joint distribution:

$$p(X_1, \dots, X_7) = p(X_1)p(X_2)p(X_3)p(X_3|X_2)p(X_4|X_1, X_3)p(X_5|X_1, X_3)p(X_6|X_4X_3)p(X_7|X_4, X_5)$$

2. Write the joint distribution as the product of the correct conditional distributions for the graph below.

