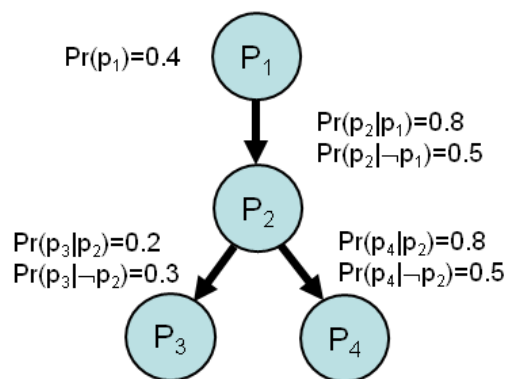


Bayes networks

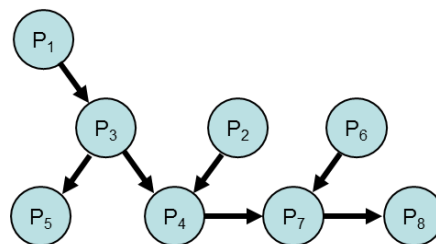
SMU*

Exercise 1: Consider a roll of fair dice. Let A be true if the number on the dice is even; false otherwise. Let B be true if the number on the dice is a prime. Draw a table representing a joint probability distribution $Pr(A, B)$.

Exercise 2: Given the network below, calculate marginal and conditional probabilities $Pr(\neg p_3)$, $Pr(p_2|\neg p_3)$, $Pr(p_1|p_2, \neg p_3)$.



Exercise 3: Having the network/graph shown in figure below, decide on the validity of following statements:



- $P_1, P_5 \perp\!\!\!\perp P_6 | P_8$,
- $P_2 \perp\!\!\!\perp P_6 | \emptyset$,
- $P_1 \perp\!\!\!\perp P_2 | P_8$,
- $P_1 \perp\!\!\!\perp P_2, P_5 | P_4$,

*based on Jirka Klema's tutorials