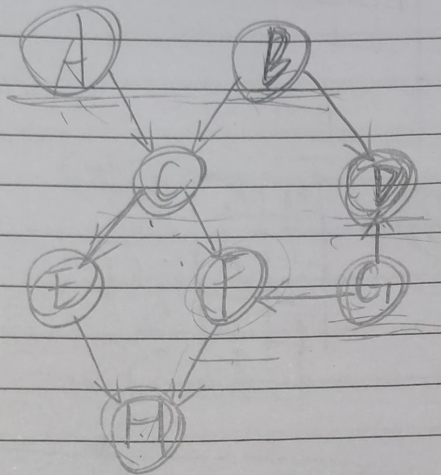


Assignment →

NO.
DATE

1.1



- (1) F (2) F (3) F (4) F (5) T (6) T
 (7) T (8) F (9) T (10) T (11) F

1.2 A || B ✓

A ≠ D | B ✓

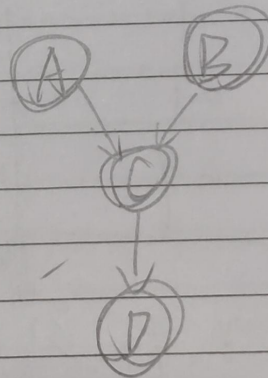
A || D | C ✓

A ≠ C ✓

B ≠ C ✓

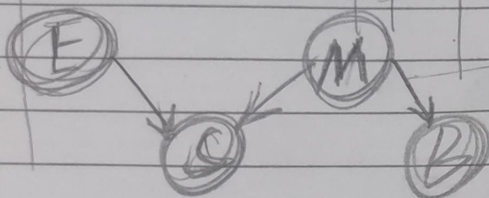
A ≠ B | D ✓

B || D | A, C ✓



1.3

E	P(E)
T	0.4
F	0.6



M	P(M)
T	0.1
F	0.9

M	B	P(B M)
T	T	1.0
T	F	0.0
F	T	0.1
F	F	0.9

E	M	S	P(S E,M)
T	T	T	1.0
T	T	F	0.0
T	F	T	0.8
T	F	F	0.2
F	T	T	0.3
F	T	F	0.7
F	F	T	0.1
F	F	F	0.9

$$\begin{aligned}
 (1) & P(M=T | S=T, B=T, E=T) \\
 &= P(M=T, S=T, B=T, E=T) \\
 & \quad P(S=T, B=T, E=T) \\
 &= \frac{P(E=T) P(S=T | E=T, M=T) \cdot P(B=T | M=T) \cdot P(M=T)}{P(E=T) P(S=T | E=T, M=T) \cdot P(B=T | M=T) \cdot P(M=T)} \\
 &= \frac{P(M=T)}{P(M=T)} = 1.0
 \end{aligned}$$

$$(1) P(E=F, S=F, M=F, B=F)$$

$$\begin{aligned}
 &= P(E=F) P(M=F) P(S=F | E=F, M=F) P(B=F | M=F) \\
 &= 0.6 \cdot 0.9 \cdot 0.9 \cdot 0.9 = 0.4374
 \end{aligned}$$

$$\begin{aligned}
 (2) P(B=T) &= P(B=T | M=T) P(M=T) + P(B=T | M=F) P(M=F) \\
 &= 0.1 \cdot 0.1 + 0.1 \cdot 0.9 = 0.1
 \end{aligned}$$

$$(3) P(M=T | B=T) = \frac{P(B=T | M=T) P(M=T)}{P(B=T)} = \frac{0.1 \cdot 0.1}{0.1} = 0.1$$