3.3.4

using 3.3.2

$$P(B=T, C=\bar{T}) = P(A=T, B=T, C=\bar{T}) + P(A=F, B=T, C=\bar{T})$$
$$= 0.04 + 0.24$$
$$= 0.28$$

| A | $P(A \mid B=T, C=\bar{T})$ |
|---|---|
| T | $P(A=T, B=T, C=\bar{T}) / P(B=T, C=\bar{T}) = 0.04/0.28 = 0.14$ |
| F | $P(A=F, B=T, C=\bar{T}) / P(B=T, C=\bar{T}) = 0.24/0.28 = 0.86$ |

using 3.3.3

$$P(B=T, C=\bar{T}) = P(A=T, B=T) + P(A=F, B=T) = 0.0\overline{6} + 0.3\overline{6}$$
$$= 0.\overline{42}$$

| A | $P(A \mid B=T, C=\bar{T})$ |
|---|---|
| T | $P(A=T, B=T, C=\bar{T}) / P(B=T, C=\bar{T}) = 0.0\overline{6} / 0.\overline{42} = 0.14$ |
| F | $P(A=F, B=T, C=\bar{T}) / P(B=T, C=\bar{T}) = 0.\overline{36} / 0.\overline{42} = 0.86$ |

## 3.3.2 (cont'd)

| A | P(A) |
|---|---|
| T | $P(A=T,B=T,C=T)+P(A=T,B=T,C=F)+P(A=T,B=F,C=T)+P(A=T,B=F,C=F)=0.04+0.06+0.08+0.02=0.2$ |
| F | $P(A=F,B=F,C=F)+P(A=F,B=F,C=T)+P(A=F,B=T,C=T)+P(A=F,B=T,C=F)=0.2+0.3+0.24+0.06=0.8$ |

## 3.3.3

$$P(C=T)=P(A=T,B=T,C=T)+P(A=T,B=F,C=T)+P(A=F,B=T,C=T)+P(A=F,B=F,C=T)=0.04+0.08+0.24+0.3=0.66$$

| A, B | P(A,B\|C) |
|---|---|
| TT | $P(A=T,B=T,C=T)/P(C=T)=0.04/0.66=0.\overline{06}$ |
| TF | $P(A=T,B=F,C=T)/P(C=T)=0.08/0.66=0.\overline{12}$ |
| FT | $P(A=F,B=T,C=T)/P(C=T)=0.24/0.66=0.\overline{36}$ |
| FF | $P(A=F,B=F,C=T)/P(C=T)=0.3/0.66=0.\overline{45}$ |

## 3.3.1

| A | P(A) |
|---|---|
| T | $P(A=T, B=T) + P(A=T, B=F) = 0.1 + 0.1 = 0.2$ |
| F | $P(A=F, B=F) + P(A=F, B=T) = 0.5 + 0.3 = 0.8$ |

## 3.3.2

| A, B | P(A, B) |
|---|---|
| TT | $P(A=T, B=T, C=T) + P(A=T, B=T, C=F) = 0.06 + 0.04 = 0.1$ |
| TF | $P(A=T, B=F, C=T) + P(A=T, B=F, C=F) = 0.08 + 0.02 = 0.1$ |
| FT | $P(A=F, B=T, C=T) + P(A=F, B=T, C=F) = 0.24 + 0.06 = 0.3$ |
| FF | $P(A=F, B=F, C=F) + P(A=F, B=F, C=T) = 0.3 + 0.2 = 0.5$ |