

**Exercise 1.**

You are given the following joint probability table  $P(A, B)$

$P(A, B)$	$b_1$	$b_2$	$b_3$
$a_1$	0.05	0.10	0.05
$a_2$	0.15	0	0.25
$a_3$	0.10	0.20	0.10

Compute  $P(A)$ ,  $P(B)$ ,  $p(A|B)$  and  $P(B|A)$ .

**Exercise 2.**

You are given the following conditional and marginal probability tables,  $P(A|B)$  and  $P(B)$

$P(A B)$	$b_1$	$b_2$	$b_3$	$P(B)$	$b_1$	$b_2$	$b_3$
$a_1$	0.4	0.3	0.6	0.4	0.4	0.2	
$a_2$	0.6	0.7	0.4				

Compute  $P(A, B)$ ,  $P(A)$  and  $P(B|A)$ .

**Exercise 3.** You are given the following joint probability table  $P(A, B, C)$

$P(A, B, C)$	$b_1$	$b_2$
$a_1$	(0.006, 0.054)	(0.048, 0.432)
$a_2$	(0.014, 0.126)	(0.032, 0.288)

Compute  $p(B, C)$  and  $p(B)$ .