Question 4

X	Y	Z
a	b	c
a	!b	c
!a	!b	c
!a	!b	c
a	!b	!c
a	b	!c
a	b	!c
a	b	!c

-Considering three variables X, Y, and Z, construct a joint distribution table from above.
-Calculate P(!a | !b)

Assignment 3

Question 1

P(Study^Cheat ^Pass)	Study		~Study	
	Cheat	~Cheat	Cheat	~Cheat
Pass	.25	.15	.10	.13
~Pass	.02	.03	.22	.10

a) **Compute** whether cheat and pass conditionally independent given study. Show all calculations.
b) **Compute** P(Pass or Cheat).

Question 2

P(Cold^Cloudy ^Rain)	Cloudy		~Cloudy	
	Rain	~Rain	Rain	~Rain
Cold	.32	.06	.26	.03
~Cold	.12	.04	.10	.07

a) **Compute** the marginal probability of ~Cold.
b) **Compute** the probability of not cloudy given the it is not raining and the weather being not cold
c) **Compute** the probability of not raining given it is not cloudy.
d) **Compute** P(~Rain or cloudy)

Question 3

	Left-Handed	Right-Handed
Cricket	.24	.1
Football	.15	.1
Other	.15	.26

a) **Compute** the probability of playing football for a left-handed person
b) If someone plays Cricket, **estimate** the probability of being right-handed
c) **Compute** the probability of playing Football and Cricket
d) **Compute** the probability of being right-handed or left-handed
e) **Infer** whether playing football depends on being Right-Handed