Example: Consider (X, Y) with this joint pmf.

		X		
		0	1	2
	0	1/16	2/16	1/16
Y	1	2/16	4/16	2/16
	2	1/16	2/16	1/16

(Call this 3×3 matrix A)

What is the distribution of X? Y? $X + Y$?

Consider this table of values.

	0	1	2
0	0	$+1$	-1
1	-1	0	$+1$
2	$+1$	-1	0

(Call this 3×3 matrix B)

Note that $A + \varepsilon B$ is a joint pmf for small ε. Why?

Take $\varepsilon = 1/16$.

Then we get the joint pmf for (X', Y') given below.

		X'		
		0	1	2
	0	1/16	3/16	0
Y'	1	1/16	4/16	3/16
	2	2/16	1/16	1/16

What is the distribution of X'? Y'? $X' + Y'$?

Note that X and Y are independent, but X' and Y' are not.