Probability that someone goes to jail given that they broke the law, have been indicted, and face a politically motivated prosecutor. Evaluating...
$P(J|B, I, M)$

Restriction: In $P(G)$, keep only those rows where B is true, then restrict that table in turn to where only I is true, finally we restrict one more time for where M is true. Obtain new CPT, $f(G)$.

B	I	M	G	$P(G)$
1	1	1	1	0.9
1	1	1	0	0.1
1	1	0	1	0.8
1	1	0	0	0.2
1	0	1	1	0
1	0	1	0	1
1	0	0	1	0
1	0	0	1	1
0	1	1	1	0.2
0	1	1	0	0.8
0	1	0	1	0.1
0	1	0	0	0.9
0	0	1	1	0
0	0	1	0	1
0	0	0	1	0
0	0	0	1	1

$\Rightarrow$

I	M	G	$P(G)$
1	1	1	0.9
1	1	0	0.1
1	0	1	0.8
1	0	0	0.2
0	1	1	0
0	1	0	1
0	0	1	0
0	0	1	1

$\Rightarrow$

M	G	$P(G)$
1	1	0.9
1	0	0.1
0	1	0.8
0	0	0.2

$\Rightarrow$

G	$P(G)$
1	0.9
0	0.1

$= f(G)$

Elimination: Elimate G. Multiply $f(G) \times P(J)$ to get a new table $l(G, J)$ then we G-sum $l(G, J)$ to get a new table $r(J)$.

G	$P(G)$
1	0.9
0	0.1

$\times$

G	J	$P(J)$
1	1	0.9
1	0	0.1
0	1	0.1
0	0	0.9

$=$

G	J	$P(J)$
1	1	$0.9 \times 0.9 = 0.81$
1	0	$0.1 \times 0.9 = 0.09$
0	1	$0.1 \times 0.1 = 0.01$
0	0	$0.9 \times 0.1 = 0.09$

$= l(G, J)$

$l(G, J) \Rightarrow_{\text{G-sum}}$

J	$P(J)$
1	$0.81 + 0.01 = 0.82$
0	$0.09 + 0.09 = 0.18$

$= r(J)$

Normalisation... effectively a no-op in this case and we end up with $P(J|B, I, M) = 0.82$ and $P(\neg J|B, I, M) = 0.18$.