

# question3

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August 2020

hl	pr	gd	%
Y	Y	M	0.15
N	Y	M	0.11
Y	Y	F	0.11
N	Y	F	0.12
Y	N	M	0.08
N	N	M	0.18
Y	N	F	0.06
N	N	F	0.19

Where pr is representation of ground truth. In this case,

$$P(pr|hl, gd) = P(pr|hl)$$

but

$$P(hl|pr, gd) \neq P(hl|pr)$$

so this is separated but not sufficient.

pr	hl	gd	%
Y	Y	M	0.11
N	Y	M	0.14
Y	Y	F	0.09
N	Y	F	0.14
Y	N	M	0.12
N	N	M	0.16
Y	N	F	0.09
N	N	F	0.16

In this case

$$P(hl|pr, gd) = P(hl|pr)$$

but

$$P(pr|hl, gd) \neq P(pr|hl)$$

so there is sufficiency but it is not separated.