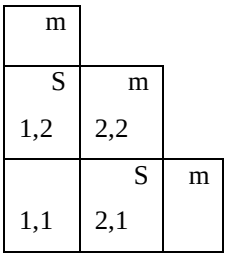
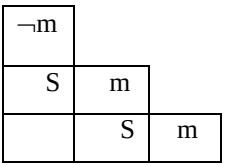
- $P(a \mid b) = P(a \wedge b) / P(b)$
  $P(a \wedge b) = P(a \mid b) * P(b)$

- $P(b \mid a) = P(b \wedge a) / P(a)$
  $P(b \wedge a) = P(b \mid a) * P(a)$
  $P(a \wedge b) = P(b \mid a) * P(a)$

- $P(b \mid a) * P(a) = P(a \mid b) * P(b)$
  **$P(b \mid a) = P(a \mid b) * P(b) / P(a)$**




1

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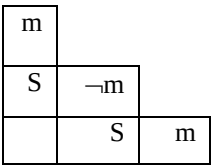


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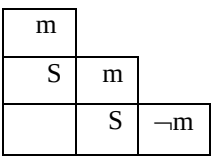


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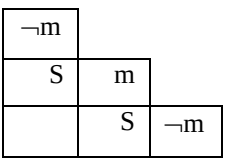


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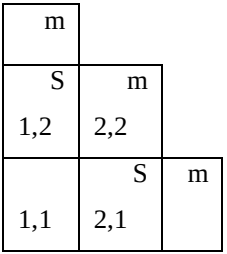
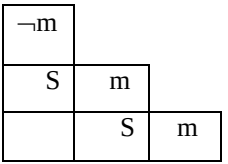



1

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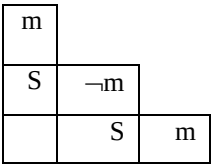
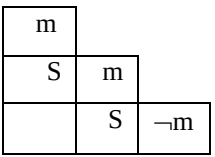



3

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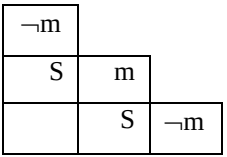
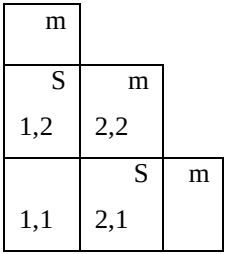



5

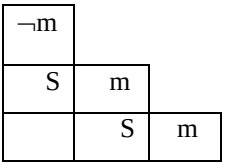
$P(m_{1,3} \mid \text{evidence}) =$

$$= \frac{0.2*0.2*0.2 + 0.2*0.8*0.2 + 0.2*0.2*0.8}{0.2*0.2*0.2 + 0.8*0.2*0.2 + 0.2*0.8*0.2 + 0.2*0.2*0.8 + 0.8*0.2*0.8} \quad [1, 3, 4]$$

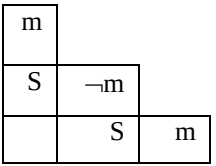
$= \quad 0.072 / 0.232 \quad \approx \quad 0.31$ ?




1




2

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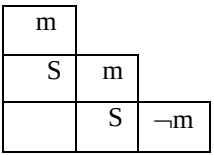


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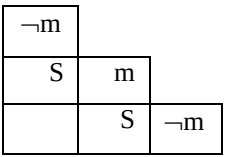


5

$P(\neg m_{1,3} \mid \text{evidence})$

$$= \frac{0.8*0.2*0.2 + 0.8*0.2*0.8}{0.2*0.2*0.2 + 0.8*0.2*0.2 + 0.2*0.8*0.2 + 0.2*0.2*0.8 + 0.8*0.2*0.8} \quad [2, 5]$$

$$= 0.16 / 0.232 \approx 0.69 \ ?$$