What is the probability that a driver who runs a red light is texting?

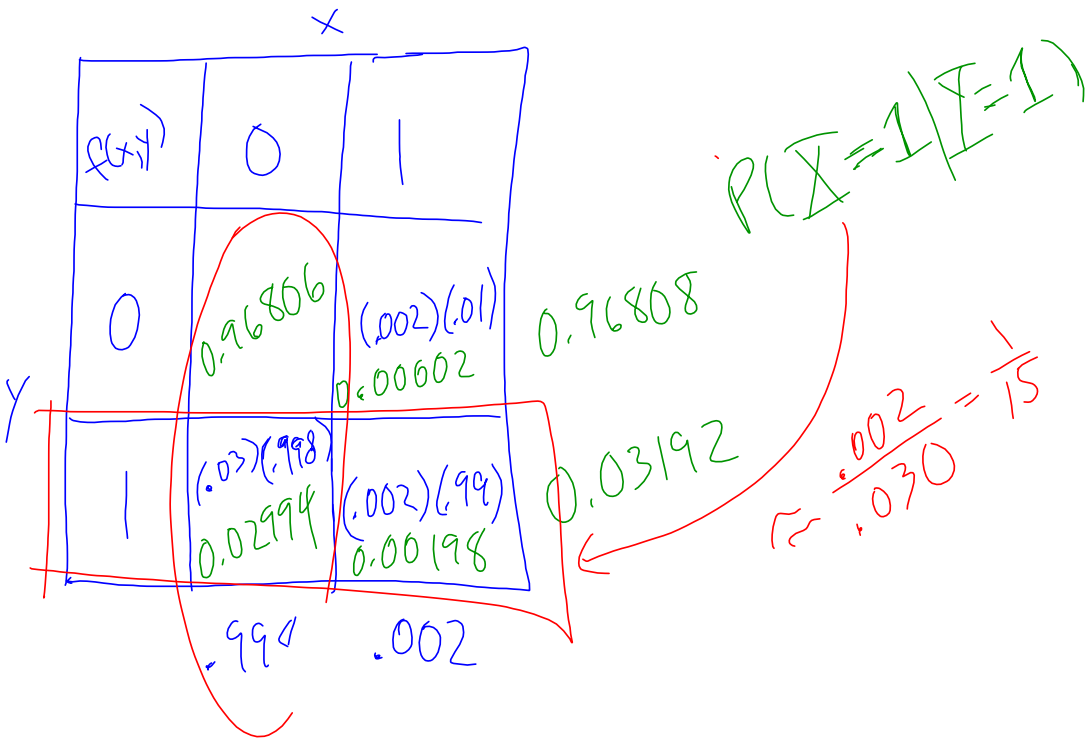
$P(B|A)$

Let A be the event of running a red light and B be the event of a driver texting when encountering a red light. What probability is this question asking for, in terms of A and B?

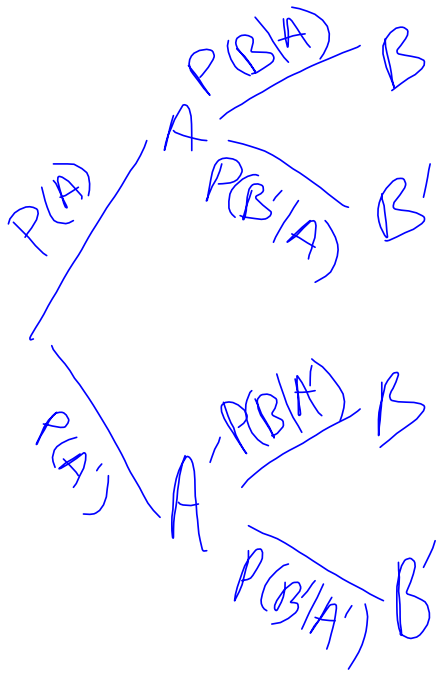
$$P(A|B) = \frac{P(A)P(B|A)}{\underbrace{P(A)P(B|A)}_{P(B\cap A)} + \underbrace{P(A')P(B|A')}_{P(B\cap A')}}$$

$$P(B\cap A) + P(B\cap A') = P(B)$$

$$P(A|B) = \frac{P(A \cap B)}{P(B)}$$


X
f(x,y)
0
1
0
1
Y
0.96806
(.002)(.01)
0.00602
0.96808
(.03)(.998)
0.02994
(.002)(.99)
0.00198
0.03192
.998
.002
P(X=1|Y=1)
= .002/.030 = 1/15

f(x,y)	Y = 1	2	3
X = 0	.016685	.009734	.008275
1	.338315	.304266	.322725
	.355	.314	.331



$$P(A \cap B) = P(A)P(B|A)$$

$$P(B \cap A') = P(A')P(B|A')$$