Probability Assignment

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Question: If A and B are such events that $\Pr(A) > 0$ and $\Pr(B) \neq 1$, then $\Pr(A'|B')$ is

1) $1 - \Pr(A|B)$
2) $1 - \Pr(A'|B)$
3) $\frac{1-\Pr(A+B)}{\Pr(B')}$
4) $\frac{\Pr(A')}{\Pr(B')}$

Solution:

$$\Pr(A'|B') = \frac{\Pr(A'B')}{\Pr(B')} \tag{1}$$

$$= \frac{\Pr((A+B)')}{\Pr(B')} \tag{2}$$

We know $\Pr(A') = 1 - \Pr(A)$

$$\Pr(A'|B') = \frac{1 - \Pr(A+B)}{\Pr(B')} \tag{3}$$