Assignment 1

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1) If $\Pr(A) = \frac{1}{2}$, $\Pr(B) = 0$, then $\Pr(A \mid B)$ is
   a) 0
   b) $\frac{1}{2}$
   c) not defined
   d) 1

   Solution: Given that the probability of event B occurring is zero i.e., event B does not occur.By using property of conditional probability we have,

$$\Pr(A \mid B) = \frac{\Pr(AB)}{\Pr(B)} \tag{0.0.1}$$

   From the (0.0.1) it is clear that if $\Pr(B) = 0$ we have

$$\Pr(A \mid B) \text{ is not defined} \tag{0.0.2}$$