Exercises

2.71 If two events, A and B, are such that $P(A) = .5$, $P(B) = .3$, and $P(A \cap B) = .1$, find the following:

   a $P(A|B)$

   b $P(B|A)$

   c $P(A|A \cup B)$

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

e $P(A \cap B|A \cup B)$

2.83 If A and B are mutually exclusive events and $P(B) > 0$, show that

$$P(A|A \cup B) = \frac{P(A)}{P(A) + P(B)}.$$