Example 4

① Define A and B

A { Card is red }

B { card is an ace }

B | A { card is an ace given card is red }

② Get Sample Spaces

Total Sample Space Before Events is 52 cards = 52

Sample Space of A { 26 cards } = 26

Sample Space of B { 4 aces } = 4 ← don't need this

Sample Space of B | A { 2 aces } = 2

$$P(A|B) = \frac{P(A \cap B)}{P(B)} \overset{B|A}{=} \frac{2/52}{26/52} = \frac{1}{13} \approx .08$$