

$$\begin{aligned}
 &P(A \cap B) \\
 &= \{P(A)P(B|A)\} \\
 &= \{P(B)P(A|B)\}
 \end{aligned}$$

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

Scenario

Suppose that 80% is the probability that a person hits the basket (on the first shot). If the person hits the first basket, then 70% is the probability that the person hits the second basket. If the person misses the first basket, then 90% is the probability that he hits the second basket.

What is the probability that the person hits both baskets?

Let H_1 represent the probability of hitting the first basket and H_2 represent hitting the second.

$$\begin{aligned}
 P(H_1) &= .8 \\
 P(H_2|H_1) &= .7 \\
 P(H_2|H_1') &= .9
 \end{aligned}$$

Probability of getting both baskets:

$$P(H_1 \cap H_2) = P(H_1) * P(H_2|H_1) = .8 * .7$$

You can also build a probability tree.