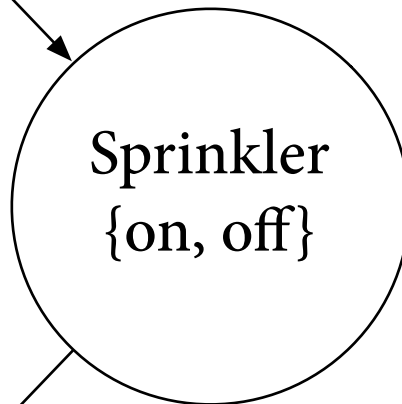


$$P(R = \text{yes}) = p$$

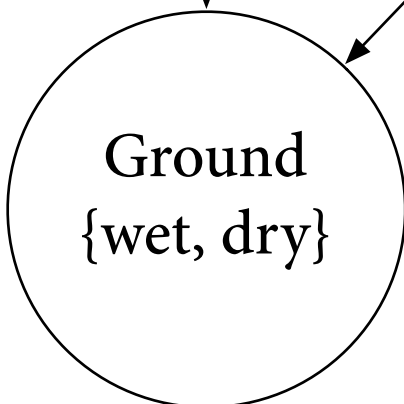


$$P(S = \text{on} | R = \text{yes}) = q_{\text{yes}}$$

$$P(S = \text{on} | R = \text{no}) = q_{\text{no}}$$



$$P(S = \text{on}) = pq_{\text{yes}} + (1 - p)q_{\text{no}}$$



$$P(G = \text{wet} | R = \text{yes}, S = \text{on}) = w_{\text{yes, on}}$$

$$P(G = \text{wet} | R = \text{yes}, S = \text{off}) = w_{\text{yes, off}}$$

$$P(G = \text{wet} | R = \text{no}, S = \text{off}) = w_{\text{no, on}}$$

$$P(G = \text{wet} | R = \text{no}, S = \text{off}) = w_{\text{no, off}}$$

$$P(G = \text{wet}) = pq_{\text{yes}}w_{\text{yes, on}} + p(1 - q_{\text{yes}})w_{\text{yes, off}}$$

$$+ (1 - p)q_{\text{no}}w_{\text{no, on}} + (1 - p)(1 - q_{\text{no}})w_{\text{no, off}}$$