

Experiment

Procedure - Roll 6-side die on table

Observation - What upward facing-side of die
Model - all 6 sides are equally likely.

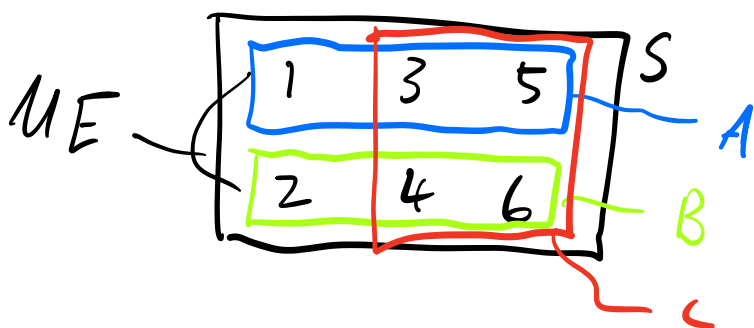
Outcomes - $S = \{1, 2, 3, 4, 5, 6\}$

Event

A = odd numbers = $\{1, 3, 5\}$

B = even number = $\{2, 4, 6\}$

C = numbers > 2 = $\{3, 4, 5, 6\}$



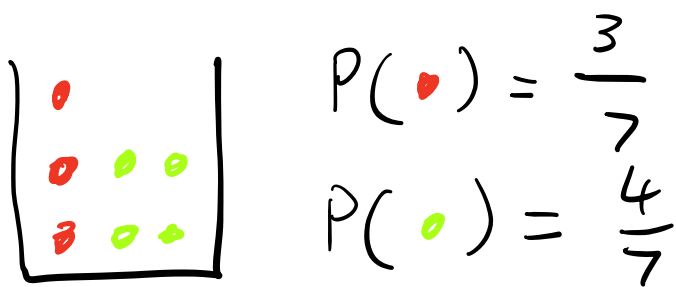
$$P(A) = \frac{3}{6} = \frac{1}{2} = 50\%$$

$$P(B) = \frac{3}{6} = \frac{1}{2} = 50\%$$

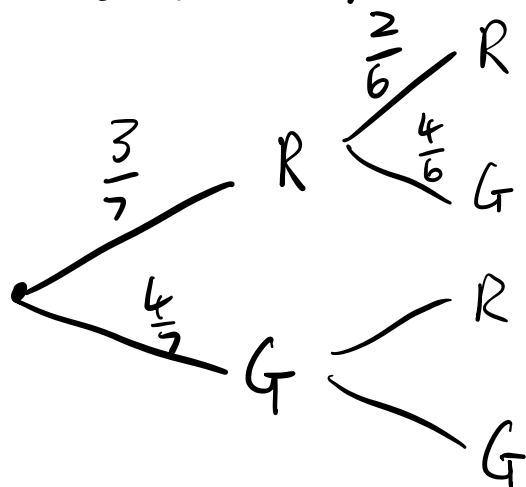
$$P(C) = \frac{4}{6} = \frac{2}{3} = 66.7\%$$

$$P(\text{odd numbers}) = 50\%$$

$$A \subset S$$



Without Replace



$$P(2^{\text{nd}} R \mid 1^{\text{st}} R) = \frac{2}{6}$$

$$P(R) = \frac{3}{7}$$

$$P(R \mid 1^{\text{st}} R) = \frac{2}{6}$$

With Replacement.

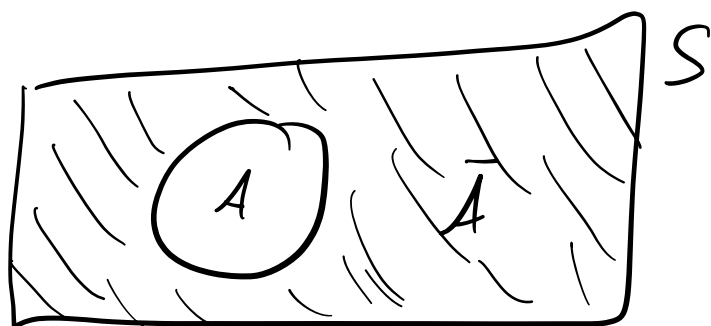
$$P(R \mid 1^{\text{st}} R) = \frac{3}{7}$$

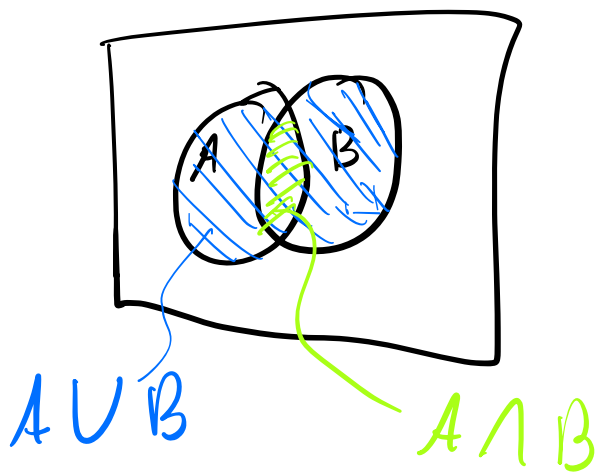
$$S = \{ \text{red}, \text{green} \} = \{R, G\}$$

$$R \in S$$

$$B \notin S$$

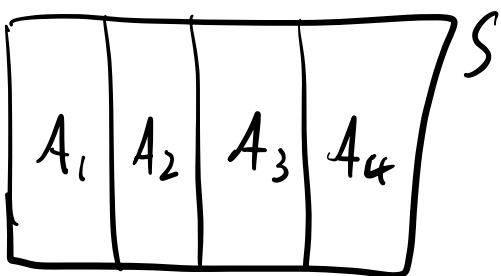
$$A = \{x \mid 0 \leq x \leq 1\}$$





$\cup$
 or
 Union

$\cap$
 and.
 intersection.



$\forall$ = for all.