

Probability

Probability Experiment

Outcome 1 Toss 2 Tosses

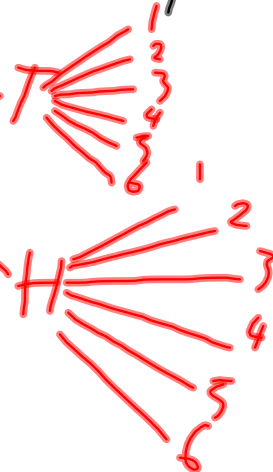
Sample Space H, T HH, HT

Example

Event Rolling A Six-Die TH, TT

1, 2, 3, 4, 5, 6

Tree Diagram



Toss coin T H

Number of Outcomes is 12

Simple Event

Flipping a coin
Rolling a Die

H 2 ← Simple Event

- H Even Number
- H 2
- H 4
- H 6

Example 2:

A) Batch 1000 parts

1000 outcomes

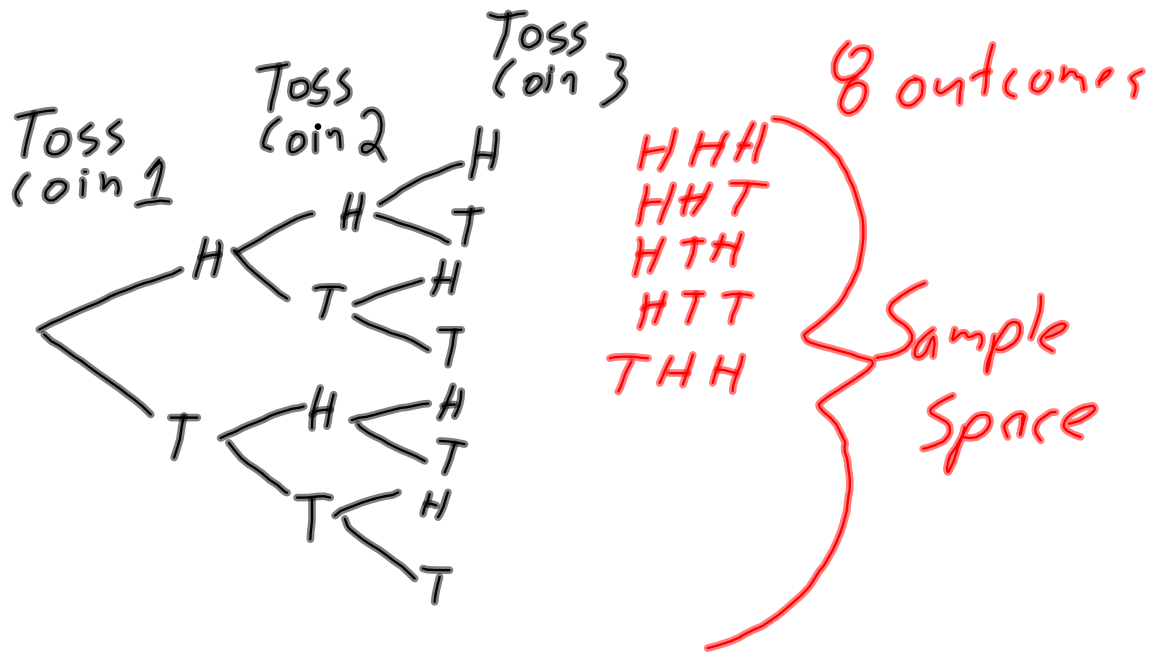
Not a simple event

B) Roll a six sided die

4, 5, 6

Not a simple event.

Has more than 1 possible outcome.



Fundamental Counting Principle:

can occur X ways

a second event can occur Y ways

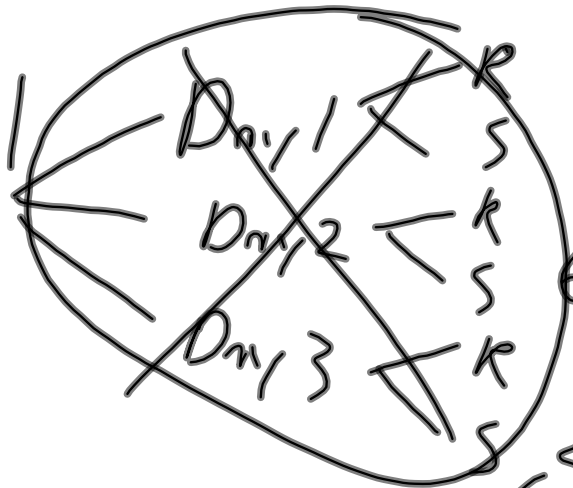
sequence is $X \cdot Y$

Man: $F, G, H = 3$

Size: Compact, Midsize = 2

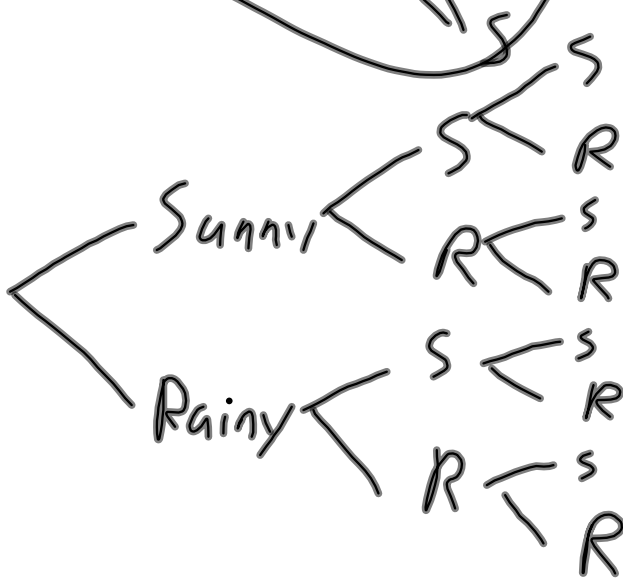
Color: $W, R, B, G = 4$

13) Day Trip to Seattle
3 Days that might be Rainy or Sunny



8 possibilities

6 outcomes



- SSS
- SSR
- SRs