Section 2.1: cont'd

Tuesday, January 16, 2018 3:27 PM

Test #2: Thursday, March 29

covers chapters 4 to 7, inclusive

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sample space ≡ the set of all simple events

(the complete list of experimental outcomes)

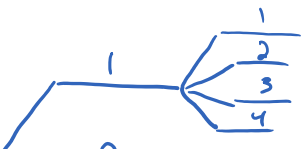
example: rolling a pair of 4-sided dice

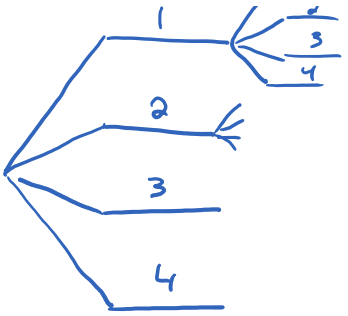
sample space:

11	12	13	14
21	22	23	24
31	32	33	34
41	42	43	44

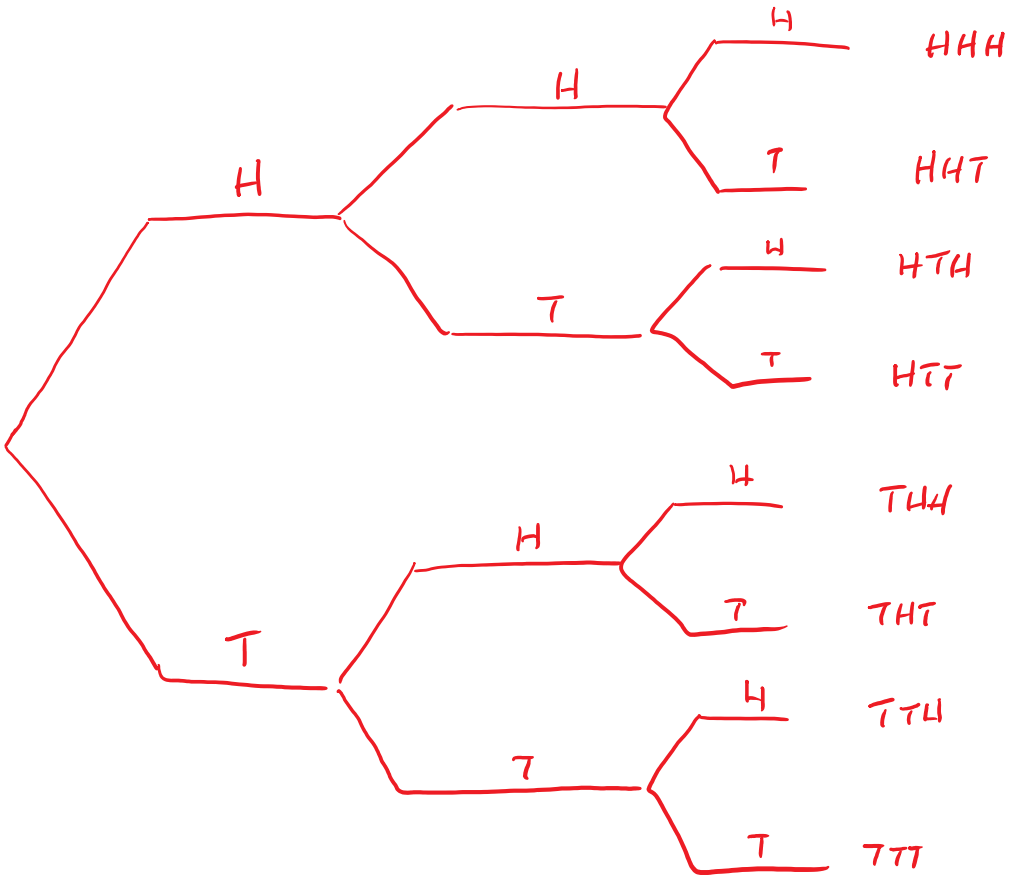
note: if the two dice are fair (equal chance of landing on any of the sides) then the probability of any single event is $\frac{1}{16}$

note: if you are having trouble generating the sample space, you can always try using a tree diagram





example: what is the sample space for flipping a coin three times?



classical probability:

the probability of an event happening equal the the sum of the probabilities of the simple events in that compound event

notation: $P(A)$ = probability of event A happening

if all simple events are equally likely, then

$$P(A) = \frac{n(A)}{n_{tot}}$$

← numbers of ways A can happen

← total number of events in the sample space

back to rolling 2 fair 4-sided dice:

find the probability of rolling the following sums

Sum	P(sum)
2	1/16
3	2/16 = 1/8
4	3/16
5	4/16 = 1/4
6	3/16
7	2/16 = 1/8
8	1/16

11	12	13	14
21	22	23	24
31	32	33	34
41	42	43	44

↑ the sum of these probabilities is one