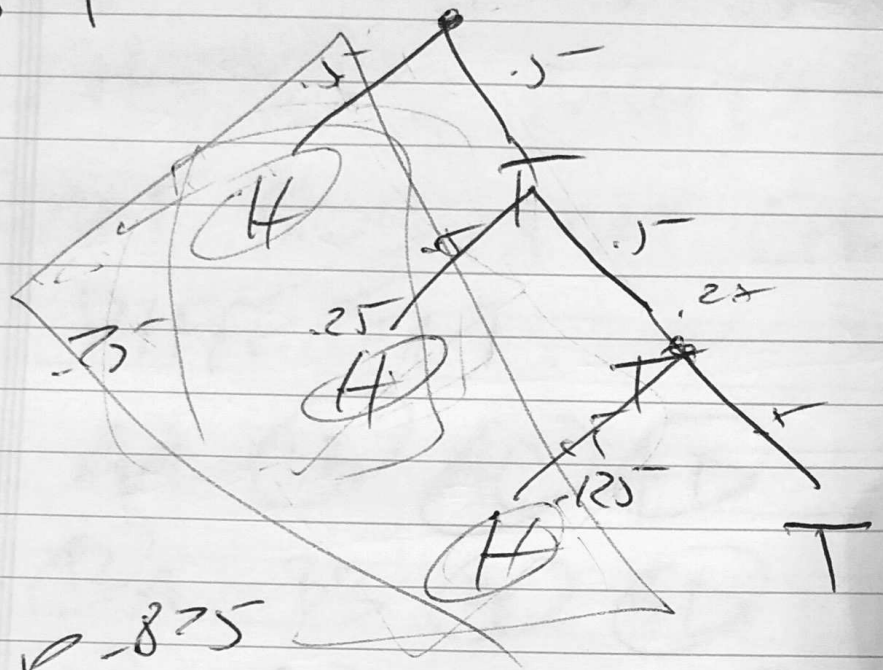
1/24/19 p1

1st TOSS



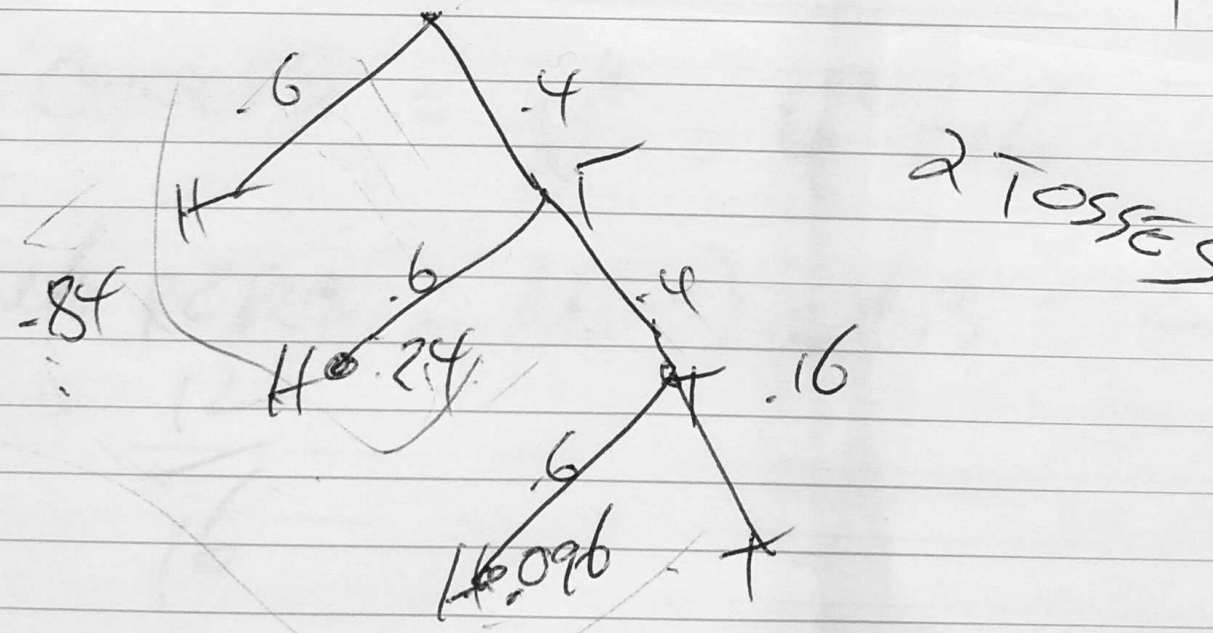
1 CLICK #3

3 TOSSES

P = .875

UNFAIR

1 CLICK #4



2 TOSSES

.936

N = 4 DINNER CHOICES

CHOOSE k = 2 NIGHTS W/ REPLAC.

WANT PROB THAT CHOICES ARE DIFFERENT.

AA AB AC AD

BA BB BC BD

CA CB CC CD

DA DB DC DD

$\frac{12}{16}$

$\#\text{CHOICES} = N^k = 4^2 = 16$

$\#\text{ w/o REPLAC} = N(N-1) = 4 \cdot 3 = 12$

$P = \frac{12}{16}$

3

PERMUTATIONS OF 3 OBJECTS

ABC
ACB
BAC
BCA
CAB
CBA

$6 = 3!$

Book EX 2.20 N=5 OBJECTS A B C D E
PICK 2 w/o ORDER
w/o REPL.

AB BA CA
AC BC ↓
AD BD
AE BE CE

2 ·

$$\frac{N(N-1)(N-2)\cdots(N-K+1)}{K!}$$

COMBINATIONS

AB, AC, AD, AE, BC, BD, BE, CD, CE, DE

$$\frac{5 \cdot 4}{2}$$

10

$$\frac{N(N-1)\cdots(N-K+1)}{K!} = \frac{N!}{(N-K)!\,K!} \qquad (4$$

$$\# = \frac{N!}{K!\,(N-K)!} \triangleq \binom{N}{K} = {}_NC_K$$

CHOICES w/o REPL o/o ORDER
CHOOSING K FROM N DIFFERENT BALLS

PERMUTATIONS $= N(N-1)\cdots(N-K+1)$

$$\frac{N!}{(N-K)!}$$

BOOK EX 2.21

PERMUT OF K PENNIES AND N-K NICKELS.

$$\frac{N!}{K!\,(N-K)!} = \binom{N}{K}$$

5

2 OF 5 PARTS ARE BAD.

- PICK 1. PROB IT'S BAD? $p = .4$
- PICK 2 PROB BOTH BAD? $p = .16$

PICK 3 ALL $p = 0$.

$N = 9$ COINS

$k_1 = 1$

$k_2 = 1$

$k_3 = 1$

$k_4 = 3$

$k_5 = 3$

$$\#PERM = \frac{9!}{1!1!1!3!3!}$$

$$\frac{362880}{6 \cdot 6} \approx 10{,}000$$