

STAT 200 3-4-09

① POST EXAM 2 KEYS TODAY

② DEDUCTIONS FOR LACK OF $\rho = \frac{\bar{xy} - \bar{x}\bar{y}}{\sqrt{\bar{x}^2 - \bar{x}^2} \sqrt{\bar{y}^2 - \bar{y}^2}}$
 $\rho = dy/dx$, dy/dx DONE LATER.

③ ANGEL POST OF ALL RAW SCORES - TO BE CORRECTED -

④ MATHEMATICA NOTEBOOK TO CALC GRADE FROM RAW SCORES

Grade [Rec1, Rec2, ..., E1, ..., E2, EST OF GRADES - - -]
 ↑ ↑ ↑
 RAW SCORES

PROBABILITY

$$? P(\text{JACK } 5) = \frac{1}{3}$$

CLASSICAL MODEL

LIST ALL POSSIBILITIES

$$P(\text{JACK } 5) = \frac{\#(\text{JACK } 5)}{\#(\text{TOTAL})}$$

MODEL $\{1, 1, 5\}$. \odot

$\{1a, 1b, 5c\}$ JACK DRAWS FIRST

JILL " SECOND

DRAWS WITHOUT REPLACEMENT

EQ PROBABILITY ON BILLS REMAINING.

$$P(\text{JILL } 5) = \frac{2}{6} = \frac{1}{3}$$

$$P(\text{JACK } 5)^* = \frac{2}{6} = \frac{1}{3}$$

$$P(\text{NEITHER } 5)^\oplus = \frac{2}{6} = \frac{1}{3}$$

JACK JILL

a b

a c ✓

b a

b c ✓

* c a

* c b

$$\frac{1}{2} \left(\frac{1}{3} \right)$$

BALLS FROM URN $\boxed{6R \ 3G \ 4B}$ WITHOUT
REPL

SELECTIONS EQ PROBABLE ON THOSE REMAINING

$$P(R_1) = \frac{6}{6+3+4=13}$$

CLASSICAL

$$P(R_2 | R_1) = \frac{5}{12}$$

"IF"

$\boxed{5R \ 3G \ 4B}$
"IF"

$$\begin{aligned} P(R_1 R_2) &= \frac{\#R_1 R_2}{\#TOT} \\ &= \frac{\#R_1}{\#TOT} \frac{\#R_1 R_2}{\#R_1} \\ &= P(R_1) P(R_2 | R_1) \end{aligned}$$

ARGUE THAT

$$\begin{aligned} P(R_1 R_2) &= P(R_1) P(R_2 | R_1) \\ &= \frac{6}{13} \frac{5}{12} \end{aligned}$$

$$5700 P(R_1 R_2 B_3)$$

$$= P(R_1) P(R_2 | R_1) P(B_3 | R_1 R_2)$$

$$\stackrel{\text{NOT}}{=} P(R_1) P(R_2) P(B_3) \quad \text{IF IN GEN'L}$$

WILL BE IF INDEPENDENT. $P(R_2 | R_1)$
 $= P(R_2)$

$$P(JULS) = P(\text{JACK 1 JULS})$$

LEFT \Rightarrow RT
RT \Rightarrow LEFT

$$\begin{aligned} &= P(\text{JACK 1}) P(\text{JULS} | \text{JACK 1}) \\ &= \frac{2}{3} \left(\frac{1}{2}\right) \quad \text{IF} = \frac{1}{3} \end{aligned}$$

1 1 5 1 1 5

1 1 1 5 5

JACK FIRST
JILL SECOND

$$P(\text{JACK } S) = \frac{2}{5}$$

$$P(\text{JILL } S) = \frac{2}{5} \text{ SAME AS JACK}$$

$$P(\text{JILL } S) \stackrel{\text{ADDN}}{=} P(\text{JACK } 1 \text{ JILL } S)$$

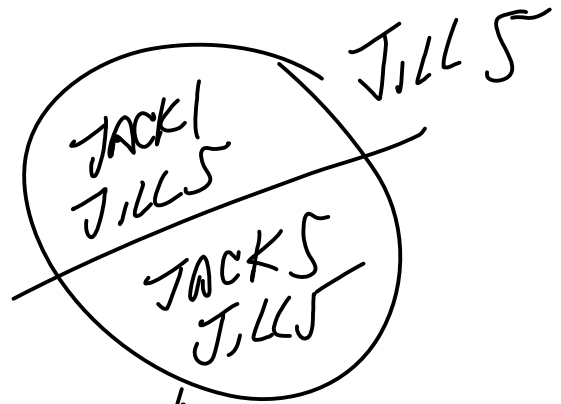
$$+ P(\text{JACK } S \text{ JILL } S)$$

$$P(\text{JACK } 1 \text{ JILL } S) = P(\text{JACK } 1) P(\text{JILL } S \mid \text{JACK } 1)$$

$$= \frac{3}{5} \cdot \frac{1}{2} \text{ IF}$$

$$P(\text{JACK } S \text{ JILL } S) = \frac{2}{5} \cdot \frac{1}{4} = \frac{1}{10}$$

$$\text{SO } P(\text{JILL } S) = \frac{3}{10} + \frac{1}{10} = \frac{4}{10} = \frac{2}{5} \text{ SAME AS JACK!}$$



1 1 1 5 5