Name - Shamir Roy 1D - 20241015 Course - 656922 Section - 06.

Assignment - 01

Exercise 1: Interence from Joint.

> what is the prior probability is smartpeller trainers of a

> What is the prior probability of study ?

I we remove you (Indiagonal to dismit) 4

r(study) = 0.6. (where) y & (trong) q = (charge potentie) s

> What is the conditional probability of prepared, given study and smart?

P(Prepared | study 1 smart) =07

PERRONAL A STUDY A SMARTS (CHAPE) 92

EP 2 = 2.0 X8P (spids no smart) (+marc) 9

(Gours) & Gramio) 432 (conte 1) tooms) 8 ...

o.48

independent of south of south ...

[monts & 10 50.9] = 6.09

915.0 = (Espins V gardais) d .

8 (propored) = 0.689 .

9.0 = (8.001) 8 ...

Carrier Land

5.0 = (+mos) 9.

facruse 2.

wist Interest gam doing.

-> 15 smart independent of Himdus, i) soing self is to

smart and study are independent is

·P (smart 1) Independent) = P (smart) * P ? >11 11

P(smort of shudy) = p (smort) # p (shudy)

: P(smarth study) = 0.432 + 0.048 = 0.48.

: P(smart) = 0.8

resided study of smooth) = 00 " L b (2 mgh) 5 0.8 (chart (resource) 3

i. (csmnot) & p (squdy) 15, 0,8 × 0.6 = 0.48

i. P (smart of study) 2 p (smart) P (study)

independent of study. ... Smort is

-> 15 prepared independent of study 7

i. p (prepared 1 study) = 0.516.

.. p (prepared) = 0.689.

.: p (squar) = 0.6

... p (prepared) x p (study) = 0.684 x 0.6 = 0.4109 i. P(prepared of study) & P(prepared) & p (study) i. prepared is most findependent of study and i Enuruse 3: 21 6.2 mls ... let's unoter star somet = 5m force for i from? prepared sixen prepared = p. Growt? Study = St. prosent is probabled from topen fronts of C P(Smnp1st) = - P(Smnpnst) I terms to sip P(sto P15m) == 0.4322 = -0.6 180.0 8.0 = 0.72 . 45 0 : P(Sm n St) P (Sm | St) = (2+0 5m) (42)9 = (erzitz) 7 1000 = 0.48 - F. 0.8 \$12 - F $P(P|ST) = \frac{P(P\cap ST)}{P(ST)}$ = 0.816 = 0.86

· P(Sm/St) x P(P/St) = 0.8 x 0.86 Connection Comments of the Connection of the Con · P (Sm. 1 P (Sm. 1 P (P) 57) 2 8 90 . Study 15 conditionally independent of .: Smart is not prepared given Andy in a largery) Is study conditionally independent of prepared 21, 16 v 2 2 2 2 (15 (18 (1 11 5)) = (+2/400 P(stn PISm) = P(stntphism) P (smo) pro 0.432 0.0. 0.8 0.77 = 0.54. P(sm 11 51) P (5+15m) = P(5+15m) (12) 9 P(sm) 84.2 = 0.48 7.0= 0.6 (many (+1) 865 1810 =

$$P(P|Sm) = \frac{P(P|Sm)}{P(Sm)}$$

$$= \frac{0.592}{0.8} (3.0.74) (3.5)$$

$$P(SH|Sm) + P(P|Sm) = 0.6 \times 0.74$$

$$= 0.944 (3.5)$$

$$P(SH \cap P|Sm) + P(SH|Sm) + P(P|Sm) (3.5) (3.5)$$

$$Shudy is not conditionally independent of prepared.

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when smart.

$$P(C) = 0.908 \times P(C \cap C) = 0.98$$

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$$P(C \cap$$$$

(m203)9 $\langle n \rangle$ $V(\zeta m)$ O + 6 5 6 (91e) + PCE) P(510) * P(c) 1(cla) P(G(C') + P(O) P(2/42) + P(e) = 1890 x 8.0 = (m2/9) 9 * (m2/+2) 9 189 P(C19) 17949 P(C/4) +2)9 + (m2) 90 +2) Study is not und (1910) & (1910) & plante. $\frac{P(c'|G)}{P(c|G)} = \frac{189}{99}$ took to extind :. P(c1.4) > P(caterio)) = min .. The person is more likely to not 8 be 0 = (1) 9

... The person is more likely to not 8 be 0 = (1) 9 a criminal. $P(c(\zeta) = 2)$ $\frac{(3)3 \cdot (313)3}{(313)3} = (313)3$ (i) (s) q (s) p) q (s) (s) 1 s) 1