Problems:	The state of the s	1 - 1 - 1 - 1 - 1 - 1 - 1 - 1 - 1 - 1 -
		ni Proset
1). Three balls	are drawn a	+ yandom without
millant	/ A MX CON	i will a
2 1 21 1	11 black bows.	11
1 =	/ // /	4
ho. of red	balls drawn, fi	rd the joint probability
distribution	of (x, y).	•11

1	Red balls = 3 Crime: White balls = 2 Three balls one Black balls = 4. drawn without suplaument.
	Let X -> Be No. of white balls drawn. Y -> No- of red balls drawn.
	Now, X= {0,1,2}
	7 = { 0, Dp. R.z.Jayas spal_Module 2

To find! - Soint prob. distb.
$$y = (x,y)$$

(i.e.) $P(x=0, y=0)$ $g(x=1, y=0)$ $g(x=2, y=0)$
 $P(x=0, y=1)$ $P(x=1, y=1)$ $P(x=2, y=1)$
 $P(x=0, y=2)$ $P(x=1, y=3)$ $P(x=2, y=3)$
 $P(x=0, y=3)$ $P(x=1, y=3)$ $P(x=2, y=3)$

Now,
$$\frac{1}{3}(x=0, y=0) = 4(3 = 1)$$

$$\frac{1}{3}(x=0, y=1) = (3(1)(4(2)) = 3$$

$$\frac{1}{3}(x=0, y=1) = (3(1)(4(2)) = 3$$

$$\frac{1}{3}(x=0, y=1) = (3(1)(4(2)) = 3$$

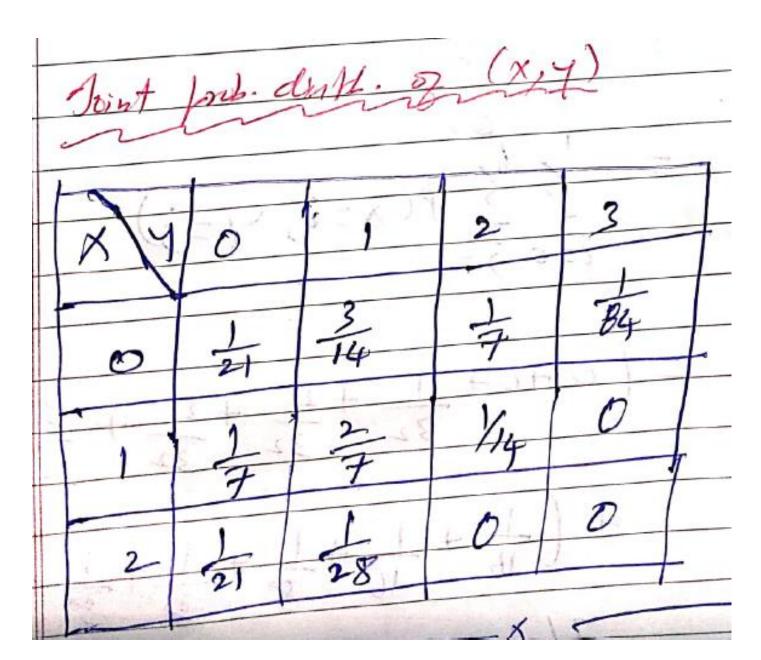
$$\frac{\int (x=0, y=2) = (3c_2)(4c_1)}{2(3)} = \frac{1}{7}$$

$$\frac{\int (x=0, y=2) = (3c_3)(4c_0)}{2(3)} = \frac{1}{5}$$

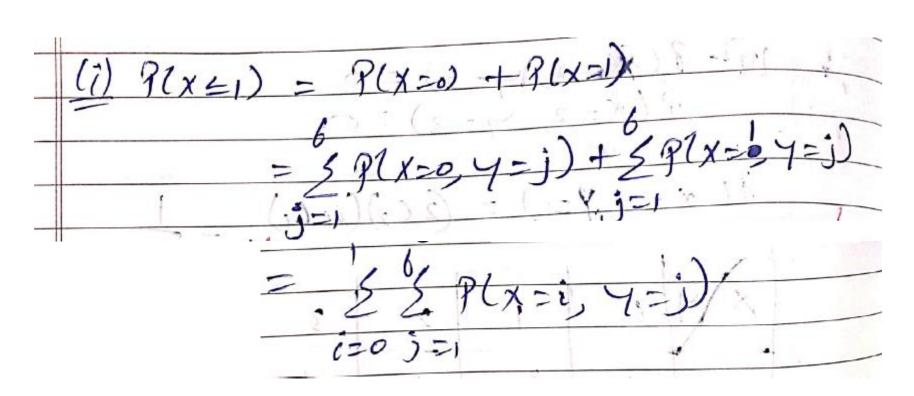
$$\frac{\int (x=1, y=0) = (2c_1)(4c_2)}{2(3)} = \frac{1}{7}$$

$$\frac{\int (x=1, y=0) = (2c_1)(3c_1)(4c_1)}{2(3)} = \frac{2}{7}$$

$$\frac{\int (x=1, y=0) = (2c_1)(3c_2)(4c_1)}{2(3)} = \frac{1}{7}$$



2). 7. (x)	58 Me	piven	belou	jo	nd (i)	PCX	61, 45 61, 45 61/46 44 64	(=3) (=3)	8
TO VE	XY		2	3	4	5	6	1	7)
	0	0	0	Y32	2/32	2/32	3/32		
	1	1/16	7/16	1/8	1/8	1/8	1/8		
	2	1/32	1/32	1/64	1/64	0	2/64		



XY	1	2	3	4	5	6	
0	. 0	0	1/32	2/32	2/32	3/32	T
1	1/16	7/16	1/8	1/8	48	1/8	

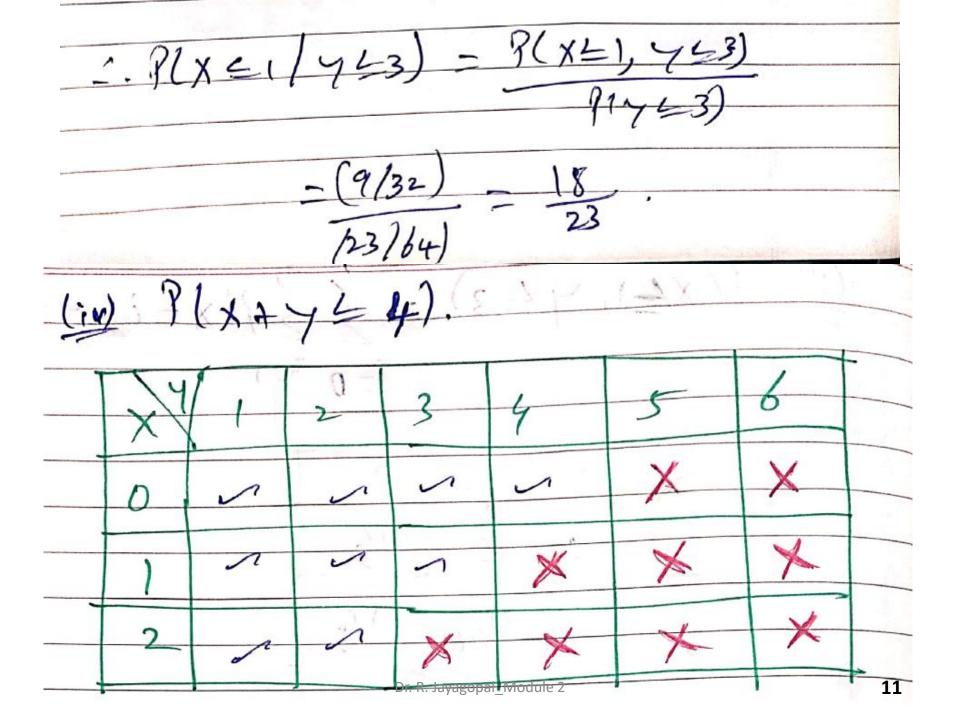
Ť	XY	1	2	3	4	5	6	1
+	0	. 0	0	1/32	2/32	2/32	3/32	Ŧ
F	1	1/16	7/16	1/8	1/8	1/8	1/8	

(3)
$$A(x=1, y=3) = 559(x=i, y=j)$$

 $i=0$ $j=1$
 $\sqrt{1}$ 2 3
 $\sqrt{1}$ 2 3
 $\sqrt{1}$ $\sqrt{1}$

(iii)
$$R(x=1/4=3) = R(x=1, 4=3)$$

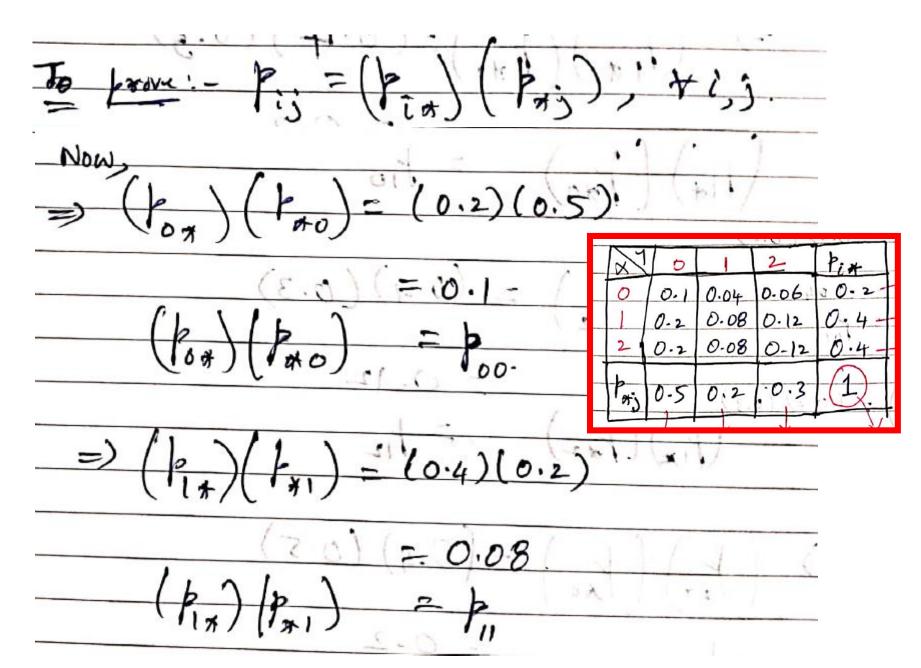
 $R(y=3) = \frac{2}{3}R(x=i, 4=j)$
 $i=0, j=1$
 $i=0, j=1$



Problem 3:

Fr	om h	e foll	owing	Jane	examine not.	Whether	X	and
4	are	indep	endent	· (01)	not.			
	XY	0	1	2				
	0	0.1		0.06				
	1	0.2	0.08	0-12		en Brancher		
,— <u>,</u>	12/	0.2	0.08	0-12				

Soluti	on:		260.2	(0.2	-/	1/- 1	(-
X	0	1	2	Pin	114	. ht	
0	0.1	0.04	0.06	0-2-	-> Por	= 0.1+0	0.04 +0.06
1	0-2	0.08	0.12	0.4-	-> PIX		.08 to .12
2	0.2	0.08	0-12	0.4-	-> p	= 0.2+0	
Pors	0-5	0.2	.0.3	1.		/ /	
			1	V	otal pro	balility.	
	P*D	PAI	·Paz	<u> </u>		,	
=	0.1	= 0.04	=0.08	,	(4		
	10.2	+0.08	1 +0-1	2	(14)	1 /40.	
	10.2	+0.08	+0.1	12			



$$\begin{array}{c} (1) & (2\pi) & (2$$

Dr. R. Jayagopal_Module 2

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