

CHI-Square

(22)

1

Total 1600

Null — Suits are equal
Alternate — Not equal

E O

S 400 404 $\frac{(400-40)^2}{400} = .04$

H 400 420 1

D 400 400 0

C 400 376 $\frac{(400-376)^2}{400} = 1.44$

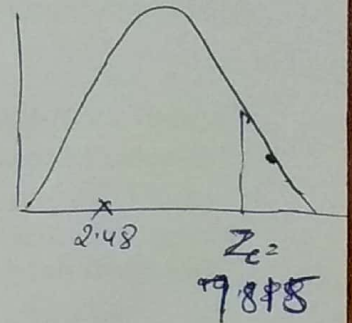
$$df = 4 - 1 = 3$$

$$SI = 5\%$$

$$Z_c = 19.818$$

2.48

Accept Null Hypo



2

Total n = 1662

E

O

Z

(52 + 2) ⇒ 54 in 1 deck

S 400.1 404 .194

$$\text{No. of deck} = \frac{1662}{54} = 30.77$$

H 400.1 420 .994

$$\text{Total Cards} = 13 \times 4 \times 30.77 = 1600.4$$

D 400.1 400

C 400.1 356 2.6

$$\text{Joker} = 2 \times 30.77 = 61.5$$

J 61.6 82

12.68

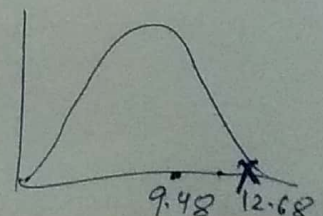
$$\text{Each type} = \frac{1600.4}{4} = 400.1$$

$$df = 5 - 1 = 4$$

$$SI = 5\%$$

$$Z_c = 9.488$$

Reject Null Hypo



(23)

2 (a) = 61.6 Tokers. Suits 30.77

(b) Card Random.

3

Stripes		Spots		Stripe and Spots	
4		3		9	
S	50	E	44	$\frac{(50-44)^2}{50}$	0.818
Sp	41		33		1.939
SS	85		99	$\frac{(85-99)^2}{99}$	1.979
				$\chi^2 = 4.737$	

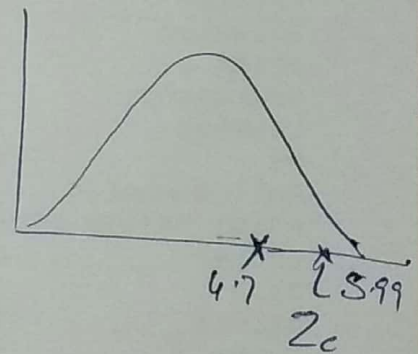
Null \rightarrow Prediction Successful

Alternate \rightarrow Not successful

$$df = (3-1) = 2$$

$$Z_{0.05} = 5.991$$

Accept Null Hypo



4

	I	C	
G	193	61	254
Y	556	184	740
	749	245	994

$$df = (2-1)(2-1) = 1$$

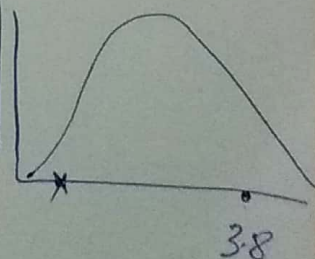
$$CI = 5\%$$

$$Z_c = 3.841$$

O	E	χ
193	191.39	0.013
556	557.60	0.0046
61	62.60	0.0411
184	182.39	0.0141

$$\chi^2 = 0.073$$

Accept Null Hypo



(29)

S

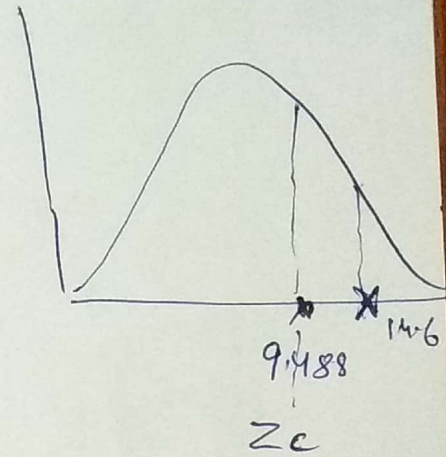
	E	O	χ
A	220	262	8.618
B	220	234	.890
C	220	204	1.16
D	220	190	4.09
E	220	210	.45

14.6

$$df = 5 - 1 = 4$$

$$\alpha = .05$$

$$Z_c = 9.488$$



Rejects Null Hypothesis