24-8

H_0: Each spot is = likely $(P_A = P_B = \cdots = P_F)$

H_a: AT least one spot is not = likely

$df = 5$

- exp. $= 71/6 = 11.8\overline{3} \geq 5$
- treat cones are SRS of all possible cones

$$\chi^2 = \frac{(9-11.83)^2}{11.83} + \frac{(6-11.83)^2}{11.83} + \cdots + \frac{(23-11.83)^2}{11.83}$$

$$= 64.65$$

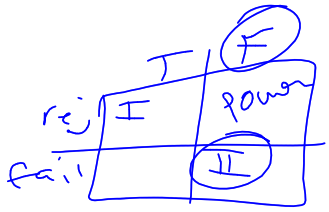
$$Pr(\chi^2 > 64.65) \approx 0$$

with a p-value of ≈ 0, this is sign. at $\alpha = .001$

Reject H_0. At least one spot is not = likely.

- which spot contributed most (χ^2) test stat.

24-15



a) Not guar. to reject
not sign. diff.

b) Type II

c) larger n ⇒ inc. power/dec. Type II

50/25/25

H_0 ⇒ False

H_0: colors are = likely

H_a: at least one color isn't = likely

*You ....

25-1

	72	88	04	
very happy	486 (511.05)	498 (466.5)	419 (425.45)	1403
less than	1120 (1094.95)	968 (999.5)	918 (911.55)	3006
	1606	1466	1337	4409

obs. units: Amer. adults
exp: year → categ.
resp: very happy/not categ. var.

p = prop. of all adult Amer who consider themselves very happy

$H_0: p_{72} = p_{88} = p_{04}$

H_a: at least one of the above prop. differs.

obs. study:
- ind. random samples → took random surveys in '72, '88, '04

$$\text{exp.} = \frac{R \cdot C}{n}$$

$$\text{very happy, '88} = \frac{1403 \cdot 1466}{4409}$$

$$\chi^2 = \frac{(486-511.05)^2}{511.05} + \frac{(498-466.5)^2}{466.5} + \cdots + \frac{(918-911.55)^2}{911.55}$$

$\chi^2 = 5.064$

$Pr(\chi^2 \geq 5.064) = .0795$

$$d.f. = (r-1)(c-1) = (2-1)(3-1) = 2$$

p-value of .0795, is not sign. at $\alpha = .05$. Fail to reject H_0. I do not have the prop. of AA who are very happy has changed