Statistics 300 **Tue./Thu.**
Quiz #18 **7:00-8:50 p.m.** **Name:** Solution

(8 points - 20 minutes : it's a big table)

1. **Use the data in the contingency table to test the claim that customers at coffe vendors A, B, C, and D choose types of coffe beverages in the same proportions.** (Use $\alpha = 0.025$ for this test)

$r = 3$ $c = 4$ $df = 6$

Coffee Choice	Vendor A	B	C	D	Total
Plain	115	123	138	128	504
Latte	55	53	73	58	239
Mocha	80	74	39	64	257
Total	250	250	250	250	1000

126	126	126	126
59.75	59.75	59.75	59.75
64.25	64.25	64.25	64.25

3.86	6.48	9.92	

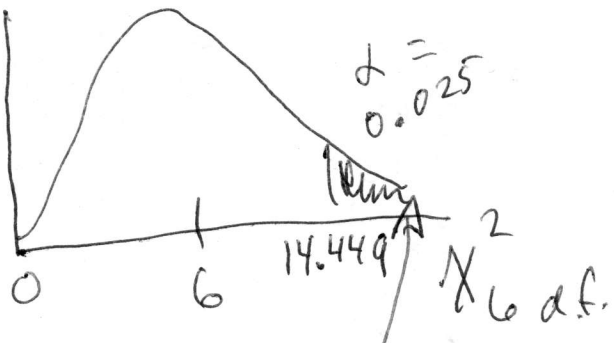
Claim: _____

_____

H_0: proportions in each column are the same : homogeneous

H_1: not H_0:

_____



$\Sigma = 15.26$

$\sum\left[\frac{(O-E)^2}{E}\right] > 15.26$

Reject H_0:

Statistics 300 **Tue./Thu.**
Quiz #18 **7:00-8:50 p.m.**

Name: Solution

(8 points - 10 minutes)

2. **Use the data for a random sample of claims against auto insurance in Your City to test the claim that losses due to various causes occur in Your City in the same proportions that they occur in cities throughout the nation.** (Use a Type I error rate of 0.05 for this test)

OBS

Type of Insurance Claim	Sample From Your City	National City Proportions
Theft	142	10%
Vandalism	78	9%
Fire	31	3%
Flood/Storm	10	2%
Collision	739	76%
Total	1000	100%

$N = 1000$

EXP

100
90
30
20
760

Claim: proportions in My city are the same as National

H_0: proportions = national

H_1: No they are not!

$\alpha = 0.05$

$k = 5$

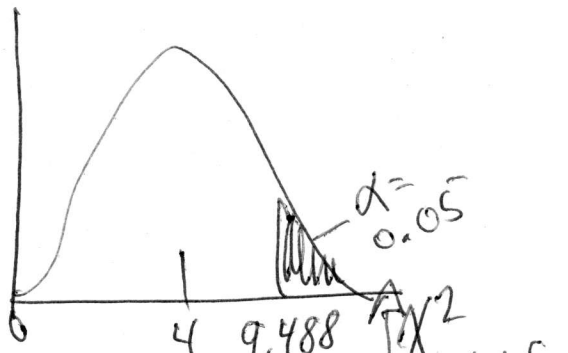
$df = k - 1 = 4$

$\frac{(O-E)^2}{E}$

17.64
1.60
0.03
5.00
0.58

24.85

$\sum\left[\frac{(O-E)^2}{E}\right] = 24.85$



Reject H_0