Panel 1

Last Time

Contingency tables: one variable I in rows, var 2 in cols, to find out if they are related!

Row / Col percent

	A	B	C	totals
1	6			
2	4	7	9	20
2	5			
	15			

4 into row %: $\frac{4}{20} \cdot 100$

into col %: $4/15 \cdot 100$

1

Panel 2

	1 - extremely liberal	2 - liberal	3 - slightly liberal	4 - moderate	5 - slightly conservative	6 - conservative	7 - extremely conservative	Total
legal	30	77	76	185	50	51	10	479
	(6.263%)	(16.08%)	(15.87%)	(38.62%)	(10.44%)	(10.65%)	(2.088%)	(100.00%)
	(62.5%)	(58.33%)	(52.78%)	(41.2%)	(28.41%)	(25%)	(25.64%)	(40.18%)
not legal	18	55	68	264	126	153	29	713
	(2.525%)	(7.714%)	(9.537%)	(37.03%)	(17.67%)	(21.46%)	(4.067%)	(100.00%)
	(37.5%)	(41.67%)	(47.22%)	(58.8%)	(71.59%)	(75%)	(74.36%)	(59.82%)
Total	48	132	144	449	176	204	39	1192
	(4.027%)	(11.07%)	(12.08%)	(37.67%)	(14.77%)	(17.11%)	(3.272%)	(100.00%)
	(100.00%)	(100.00%)	(100.00%)	(100.00%)	(100.00%)	(100.00%)	(100.00%)	(100.00%)

Should marijuana be legalized

① Which number is row %, col %

② What is the missing number?

③ Of all the supporters of legalizing marijuana, how many are moderates? 38.62% (row %)

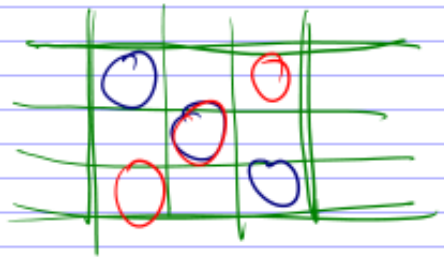
④ How many liberals are against legalizing? (41.67%)

2

Panel 3

Big Question: Is there a relationship between two variables.

Do this: indep var => col
dep var => row
compute Row %
circle highest value per row



direct relation between them
inverse relationship between them.

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Panel 4

Does Money make you happy?
↑ indep ↑ dep.

Rows: SATISFACTION WITH FINANCIAL SITUATION
Columns: GENERAL HAPPINESS

Cell format
Count (Row percent)

	1 - very happy	2 - pretty happy	3 - not too happy	Total
1 - satisfied	267 (46.76%)	273 (47.81%)	31 (5.429%)	571 (100.00%)
2 - more or less	236 (28.99%)	476 (58.48%)	102 (12.53%)	814 (100.00%)
3 - not at all satisfied	93 (14.93%)	348 (55.86%)	182 (29.21%)	623 (100.00%)
Total	596 (29.68%)	1097 (54.63%)	315 (15.69%)	2008 (100.00%)

not related!

4

Panel 5

Does your political opinion impact your view on legalizing Marijuana?

	1 - extremely liberal	2 - liberal	3 - slightly liberal	4 - moderate	5 - slightly conservative	6 - conservative	7 - extremely conservative	Total
legal	30 (6.269%)	77 (16.08%)	76 (15.87%)	185 (38.62%)	50 (10.44%)	51 (10.65%)	10 (2.088%)	479 (100.00%)
not legal	18 (2.525%)	55 (7.714%)	68 (9.537%)	264 (37.03%)	126 (17.67%)	153 (21.46%)	29 (4.067%)	713 (100.00%)
Total	48 (4.027%)	132 (11.07%)	144 (12.08%)	449 (37.67%)	176 (14.77%)	204 (17.11%)	39 (3.272%)	1192 (100.00%)

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Panel 6

This does not work super well, especially only for ordinal vars.

Want better mechanism => expected values

	female	males	
smoke	40/100 · 30	60/100 · 30	30
not smoke	40/100 · 70	60/100 · 70	70
	40	60	100

If there were no relation between row, col variable => expected value

$$\frac{(\text{row total}) \times (\text{col total})}{\text{total}}$$

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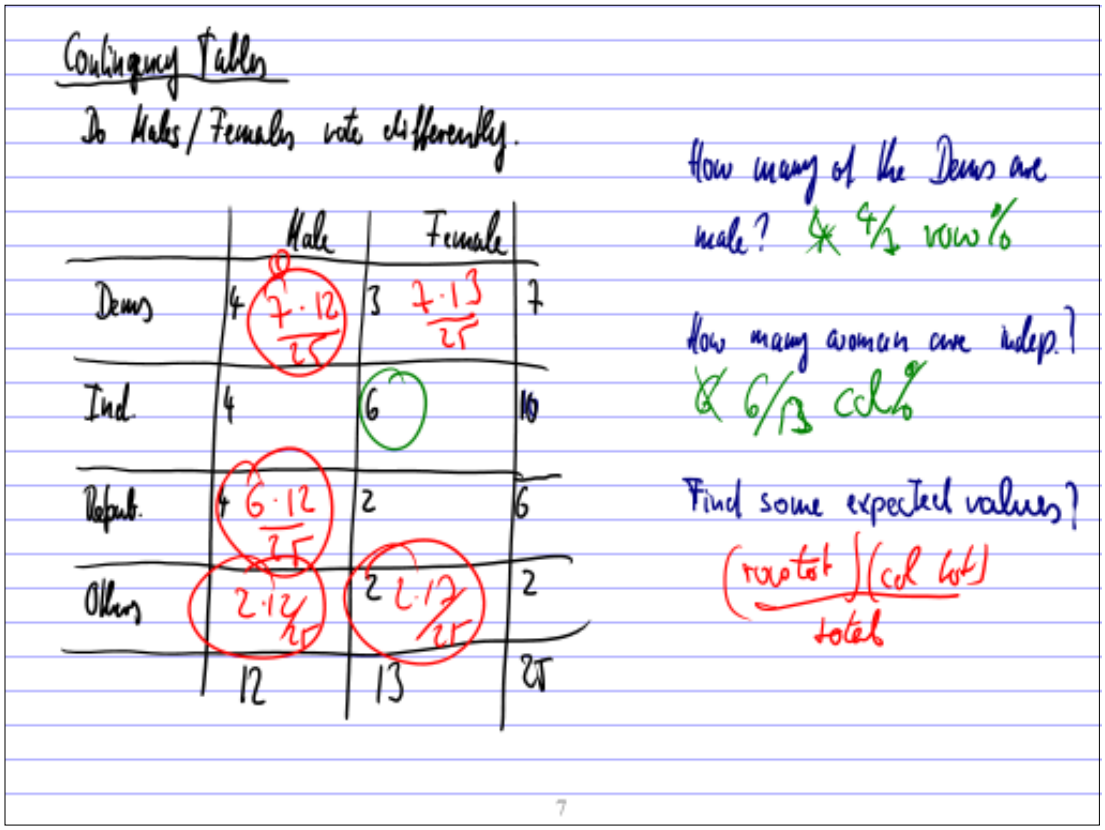
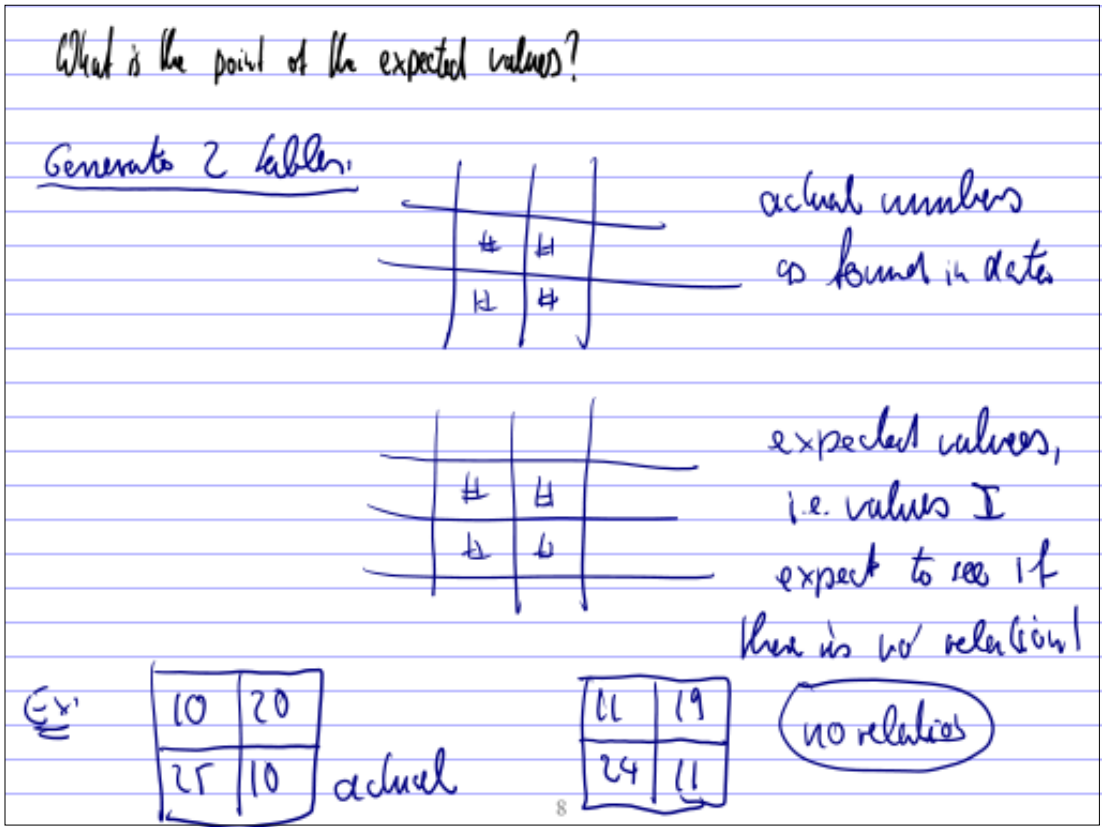
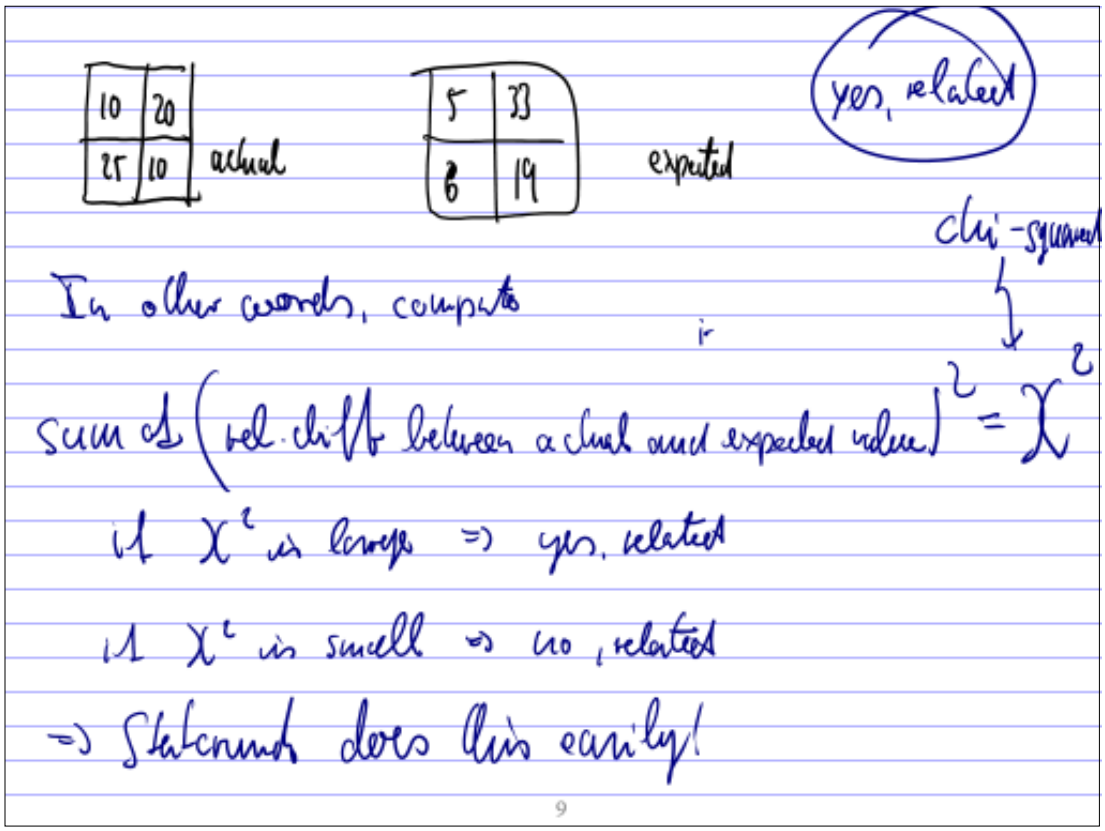
Panel 7



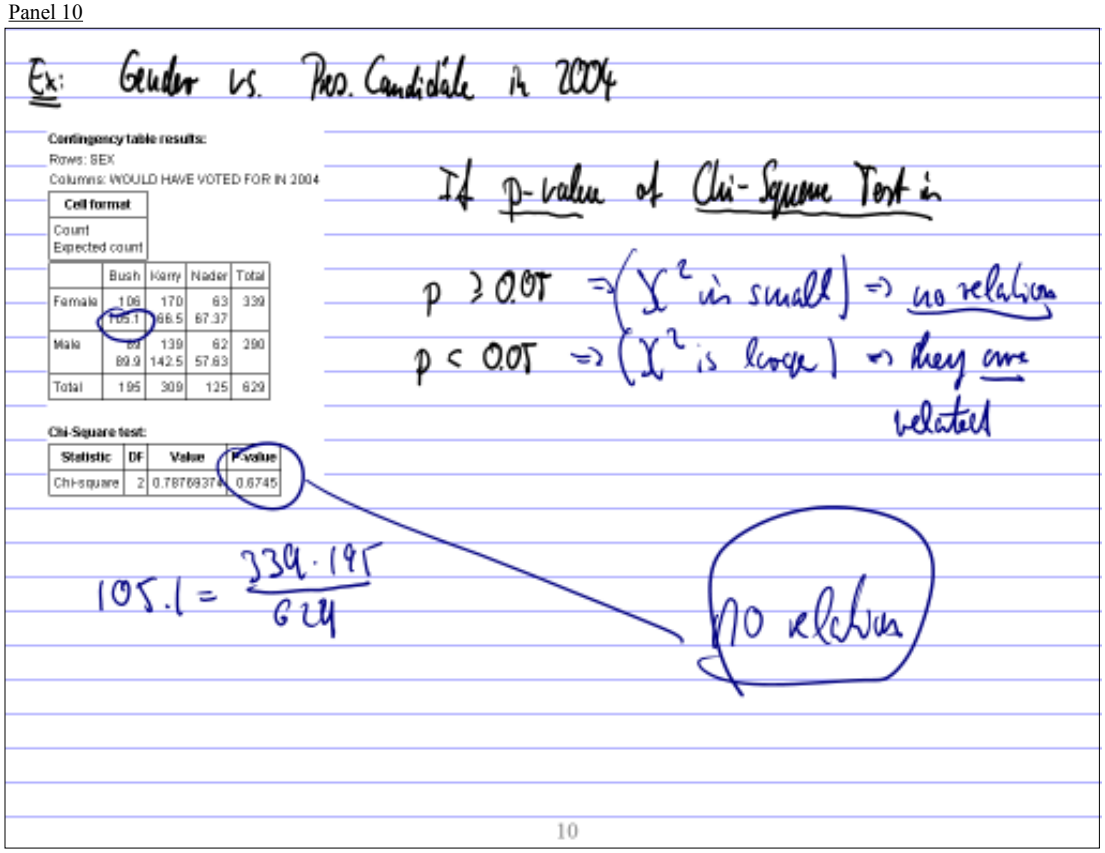
Panel 8



Panel 9



Panel 10



Panel 11

Contingency table results:

Rows: DEATH PENALTY FOR MURDER

Columns: LIBERAL OR CONSERVATIVE

Cell format
Count Expected count

	1 - extremely liberal	2 - liberal	3 - slightly liberal	4 - moderate	5 - slightly conservative	6 - conservative	7 - extremely conservative	Total
favor	28 45.06	105 151.8	126 143.8	468 453.9	181 169.6	253 205.4	53 44.4	1214
oppose	40 22.94	124 77.25	91 73.2	217 231.1	75 86.36	57 104.6	14 22.6	618
Total	68	229	217	685	256	310	67	1832

Chi-Square test:

Statistic	DF	Value	P-value
Chi-square	6	109.5226	<0.0001

They are related

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Panel 12

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