

Math - 227: Introductory Statistics Test # 5 - Fall 2007 LACC

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Name _____

1. In order to study if the a model for predicting the election result are correct a model is established that assigns probability of 0.3 to **candidate A**, a probability of 0.35 for **candidates B**, a probability of 0.20 for **candidate C**, a probability of 0.10 for **candidates D** and a probability of 0.05 for **candidate E**. a sample of 100 potential voters were collected and the following table of observed results is obtained:

Candidate	A	B	C	D	E
Number of Votes	34	30	18	10	8

Check the claim that the model matches the result at 95% confidence level. (20 pts.)

2. In order to compare the independence of the grade obtained in Math-227 and the 4 factors of i) Too many working hours, ii) too few study hours, iii) age of the student, iv) the gender of the students, the following contingency table is established: (30 pts.)

	Working hours	Study hours	Age of the students	Gender of the students
Passing Math - 227	67	92	12	15
Not Passing Math -227	93	148	8	10

At 95% confidence level check the claim that non of these factors affect the students passing or not passing Math-227

3. Use the following table of values of x vs. y to find: (65 pts.)

x	12	16	20	23	28	35
y	23	31	37	42	51	65

- Find $\sum x^2$, $\sum xy$, & $\sum y^2$
- Find S_{xx}
- Find S_{xy}
- Find S_{yy}
- Find r (The correlation coefficient)
- Check to find out whether we have an strong linear correlation or not?
- Find the line of the best fit

h. Establish a prediction interval for y when $x^* = 52$

4. Use the following table, using one - way ANOVA analysis to check whether any of the factors contribute more significantly than the others at 95% confidence level to the number of people with cancer. The sample of 350 patient resulted in the following table, (35 pts.)

Factor A	Factor B	Factor C
12	23	18
20	32	15
18	25	20
10	30	
20		
15		