

**Math 225 : Statistics - Test#2**  
**Los Angeles City College - Fall 2002**

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Name\_\_\_\_\_

Instruction: Show your work on separate sheet of paper. No credit will be given if only an answer is indicated.

1. How many different password numbers can be established, if we use a combination of letters and numbers. The passwords can be repeated digits or letters. You also can not start the password with a zero. (8 pts.)
2. The following table classifies the stock price change of Kaviani-Inc. today as up or down and yesterday's price change for 100 days. Assumes that the current stock price can fully reflect the future expected changes (you wish!) Assuming that today's price and yesterday prices are independent event (rarely), find the following: (15 pts.)

<b>Today's Stock Price Change</b>	<b>Yesterday's stock price change</b>		<b>Total</b>
	<b>Up</b>	<b>Down</b>	
<b>Up</b>	49	21	70
<b>Down</b>	21	9	30
<b>Total</b>	70	30	100

- a. Find  $P(\text{Up Today})$
- b. Find  $P(\text{Up Yesterday})$
- c. Find  $P(\text{Up Today} \mid \text{Up Yesterday})$ .
- d. Find  $P(\text{Up Today and Up Yesterday})$
- e. Find  $P(\text{Up Yesterday or Up Today})$
3. Consider the experiment of drawing 2 cards from a deck of 52 cards. Find the following: (10 pts.)
  - a. Find  $P(\text{JackJack})$
  - b. Find  $P(\text{Red} \mid J)$
  - c. Find  $P(\text{King} \& \text{King})$
  - d. Find  $P(\text{not a Jack} \& \text{not a King})$
4. Consider the experiment of rolling two unbiased dice. Find (8 pts.)
  - a.  $P(\text{Sum of the points more than 3})$
  - b.  $P(\text{Sum of the points at least 9})$
  - c.  $P(\text{Sum of the points even})$
5. Consider the experiment of drawing one card from a deck of 52 cards. Find (8 pts.)
  - a. Odds against the card being a King.
  - b. Odds in favor of a Red Jack.
6. A door-to-door salesperson for Kaviani-Inc. has a 20% sales success rate. Find the probability that during the next 20 potential customer visitation this person makes the

following sales: (17 pts.)

- a.  $P(\text{Five or fewer sales})$
- b.  $P(\text{Three sales})$
- c.  $P(\text{Four or more sales})$
- d.  $P(\text{Fail to make 16 or more sales})$

7. Answer the following using Counting Principles: (10 pts.)

- a. In how many ways a committee of three can be selected from a group of 10 for the position of president, vice president & secretary.
- b. Find the number of ways that a company with 12 areas can market one major and one minor target areas.

8. The number of bids submitted by a CPA firm prior to winning a competitive government contract from SBA is given in the following table: (10 pts.)

$x$	1	2	3	4	5
$P(X = x)$	0.1	0.2	0.4	0.2	0.1

- a. Find the mean
  - b. Find the variance
  - c. Find the standard deviation
9. A Shop foreman wants the supervisor to look at one of the defective unit they produced. If the defective rate is one out of every five parts. If the foreman selects five parts from the production run, find the following: (10 pts.)
- a.  $P(\text{only one defective unit is found})$
  - b.  $P(\text{No defective units are found})$
  - c.  $P(\text{at least 3 defective units are found})$
10. Find the mean and standard deviation in problem # 8 (4 pts.)