

Math 107

Exam #II

Name \_\_\_\_\_

Print Please

Mar. 05, 1997

Student # \_\_\_\_\_

**In all problems show your work; that is, show the steps or intermediate results by which you arrived at your result. Answer without showing work worth one point.**

On my honor, I have neither given nor received unauthorized aid on this exam.

Signature \_\_\_\_\_

1.(10) Find the mean of the digits in your student number

Student # \_\_\_\_\_

answer \_\_\_\_\_

2.(06) Using your student number change some of the digits to make the resulting distribution skewed to the left. You can use negative numbers if you wish.

answer \_\_\_\_\_

3.(17) A sample has outcomes and frequencies as shown in the table below. The mean  $\bar{x}$  is 0.8

x	f	$x - \bar{x}$		
-1	2			
0	3			
2	5			

Use these facts to compute the variance of the sample. Show the steps in your work; put your results in the extra columns in the table,

4.(17) A probability distribution is shown in the table below. The mean  $\mu$  is 2.7. Use the information to find the standard deviation  $\sigma$  for this distribution. Show the steps in your work; put your results in the extra columns in the table.

x	P(x)	$x - \mu$		
-2	.1			
1	.4			
5	.5			

answer \_\_\_\_\_

5.(10) Let E and F be events such that  $P(E) = .3$  and  $P(F) = .4$

If E and F are mutually exclusive what is the probability that both E or F occur?

answer\_\_\_\_\_

6.(10) Let Q and R be events such that  $P(Q) = .2$  and  $P(R) = .6$ . If Q and R are independent what is the probability that both Q and R occur?

answer\_\_\_\_\_

7.(10) For the situation of problem 6 what is the probability that Q or R occurs?

answer\_\_\_\_\_

8.(10) Let E and F be events such that  $P(E) = .7$ ,  $P(F) = .4$  and  $P(E \text{ and } F) = .5$ . E and F cannot be independent. Explain why this is so.

9.(10) A code consists of a letter of the alphabet followed by two non zero digits. If these digits must be different and if order is important (i.e. A67 is not the same as A76) then how many different such codes are possible?

answer\_\_\_\_\_