	East Los Angeles College
	Department of Mathematics
	Math 227
	Test 3 Study Guide

Drinking based on Age Groups

The following table illustrates the drinking habits based on age groups. If you select a person at random, what's the probability of selecting a person: **Approximate your answer to the nearest thousandths**

	Age 21 to 31	Age 32 to 42	Age 43 to 53	Age 54 to 64	Total
Drink	58	69	53	41	221
Not Drink	32	38	29	18	117
Total	**90**	**107**	**82**	**59**	338

1. If you select two **different** people at random, what is the probability at least one drinks?
2. If you select three **different** people at random, what is the probability at least one is aged 21 to 31 years?

Four Children

Let x represent the number of girls a couple has when having four children. The following table illustrates the probability distribution associated with having boys.

x	P(x)
0	0.0625
1	0.25
2	0.375
3	0.25
4	0.0625

If you select a person at random, what's the probability the person has:
Approximate your answer to the nearest thousandths

3. No girls?
4. At least one girl?
5. More than three girls?
6. No more than one girls?
7. Less than four girls?
8. Between one and four girls?

9. What is the mean for this distribution?
10. What is the variance for this distribution?
11. What is the standard deviation for this distribution?

The Two Red Kings Game (Approximate to the nearest hundredths)
12. Las Vegas has a new gambling game called the two Red Kings. In order to win this game, all you need to do is select two different red Kings from a standard deck. If it cost's $ 10 for a chance to win $500, compute the expected value for this game.

Life Insurance (Approximate to the nearest hundredths)
13. A $ 25,000 policy for a 32-year old female costs $ 300 per year for the premium. If the chance a 32-year old female lives the year is 0.97, what is the expected value for this policy?

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6 Children (Approximate to the nearest Thousandths)
A couple plans on having 6-children. What is the probability the couple has:
14. No boys?
15. One boy?
16. At least one boy?
17. No more than two boys?
18. More than two boys?
19. What is the expected number of boys?

Fax Machine (Approximate to the nearest Thousandths)
A machine uses 8 special components in copying a document. If probability that each component functions is 0.95 and these components function independently of one another. What is the probability that:
20. No components function?
21. One component functions?
22. Two components function?
23. Less than three components function?
24. More than five components function?
25. Between one and four components function?
26. What is the expected number of components that will function?

Murders in Friedman City (Approximate to the nearest Thousandths)
Friedman City experiences a mean of 5.8 murders per week (7 days). In the next week, what is the probability Friedman City will have:
27. No murders?
28. One murder>
29. Two murders?
30. At least two murders?
31. More than one murder?

32. No more than four murders?

33. Between one and four murders?

34. In the next month (5-days) what is the probability Friedman City experiences more than two murders?

35. In the next month (10-days) what is the probability Friedman City experiences more than two murders?

Answer Sheet

1		19	
2		20	
3		21	
4		22	
5		23	
6		24	
7		25	
8		26	
9		27	
10		28	
11		29	
12		30	
13		31	
14		32	
15		33	
16		34	
17		35	
18			