	STAT 211, Quiz 3 T112 Form: A										
Name	2:		ID#:	Serial#:							
Questi	on One (4 Points)										
Write	<u>True</u> if the statement is true or <u>H</u>	Talse if not:									
1.	The probability of success in th	e binomial distribution	can be approximate	d well by the normal							
	distribution if $np \ge 5$ and $nq \ge 5$	5.									
2.	The mean and the variance of a	n exponential random v	variable are the same	2							
3.	3. $P(X = 45)$ is not zero if X is a continuous random variable.										
4.	In the uniform distribution, all	intervals of equal lengtl	h have the different	probability.							
Questi	on Two (6 Points)										
Choos	e the <u>Best</u> answer.										
1.	If the ratio of defective items	in a shipment is 20%,	a sample of size 3	00 is taken randomly with							
	replacement, then the probabili	ty of at most 40 defection	ve item is approxim	ately:							
	a. 0.000684752 b	b. 0.0015 c.	0.9985	d. 0.9993							
2.	The yearly incomes for a group and standard deviation $\sigma = $ \$50 who have a yearly income over	of professional people 000. Then out of 20,00 \$70,000 is:	is normally distribu 0 of these people, t	ted with mean $\mu = $ \$60,000 he number of these people							
	a. 228 b	. 456 c.	10228	d. 19544							
3.	If X has a uniform distribution	over the interval [-2,3]	, the $P(X \le 0) =$								
	a.0 b	. 0.4 c.	- 0.4	d.0.6							

Question Three (10 Points)

1. If on the average three cars arrive per hour at KFUPM emergency medical center. Find the probability that there will be at most 30 minutes waiting between arrival of 2 successive cars.

2. The maturity time of a bond is a random variable having the normal distribution with Mean = 4.76 years and standard deviation = 0.04 year. What is the probability that this kind of bond will mature anywhere from 4.70 to 4.82 years?

NOTE: For some questions above, you may use your z-table or one of the following areas where										
	z_{0}	-1.5	-0.5	0.5	1.5	2.0	2.25			
	$P\left(Z \leq z_0\right)$	0.0668	0.3085	0.6915	0.9332	0.9772	0.9878			

		STAT 211, Quiz 3 T	I12 Form: B	
Name	2:		ID#:	Serial#:
Questi	ion One (4 Points)			
Write	True if the statement is true	e or <u>False</u> if not:		
1.	The probability of success	in the binomial distribu	ition can be appro	ximated well by the normal
	distribution if $np \ge 5$ or nq	<u>≤</u> 5.		
2.	The mean and the variance	e of an exponential rand	om variable are di	fferent.
3.	P(X = 45) is not zero if X i	s a continuous random	variable.	
4.	In the uniform distribution	, all intervals of equal l	ength have the sar	ne probability.
Questi	ion Two (6 Points)			
Choos	e the <u>Best</u> answer.			
1.	The number of a custome	rs in a certain bank fol	low a Poisson dis	stribution with an average of five
	customers per hour, then the	he probability of the tim	he between custom	ners is less than 30 minutes is:
	a. 0.0001	b. 0.0821	c. 0.9179	d. 0.9999
2.	If the ratio of defective it	ems in a shipment is 2	20%, a sample of	size 300 is taken randomly with
	replacement, then the prob	ability of at most 40 de	fective item is app	proximately:
	a. 0.000684752	b. 0.0015	c. 0.9985	d. 0.9993
3.	The yearly incomes for a g and standard deviation σ = income over \$70,000 is:	group of professional pe \$5000. Then out of 20	ople is normally of ,000 of these peop	listributed with mean $\mu = $ \$60,000 ble, the number who have a yearly
	a. 228	b. 456	c. 912	d. 10228
Questi	ion Three (10 Points)			

- 1. The maturity time of a bond is a random variable having the normal distribution with Mean = 4.76 years and standard deviation = 0.04 year. What is the probability that this kind of bond will mature anywhere from 4.70 to 4.82 years?
 - 2. The number of a customers served by a certain bank has an average of fifteen customers per hour, find probability of the time between serving two consecutive customers is less than 5 minutes.

NOTE: For some questions above, you may use your z-table or one of the following areas whe									
	z_{0}	0.2	0.5	1.5	2.0	2.2	2.25		
	$P\left(Z \leq z_0\right)$	0.5793	0.6915	0.9332	0.9772	0.9861	0.9878		

		STAT 211, Quiz 3 T112	Form: C					
Name	2.		ID#:	Serial#:				
Questi	ion One (4 Points)							
Write	True if the statement is true	or <u>False</u> if not:						
1.	The probability of success is	n the binomial distribution	a can be approxin	nated well by the normal				
	distribution if $np \ge 5$ or $nq \ge 2$	<u>></u> 5.						
2.	The mean and the variance	of an exponential random	variable are diffe	rent.				
3.	3. $P(X = 45)$ is zero if X is a continuous random variable.							
4.	. In the uniform distribution, all intervals of equal length have the different probability.							
Questi Choos 1.	ion Two (6 Points) e the <u>Best</u> answer. If the ratio of defective iter replacement, then the proba a. 0.000684752	ms in a shipment is 20% bility of at least 40 defecti b. 0.0015 c	, a sample of siz ve item is approx . 0.9985	te 300 is taken randomly with kimately: d. 0.9993				
2.	Customers arrive at an ATM will arrive in 6 minutes?	A teller at a rate of 20 per	hour. What is the	e probability the next customer				
	a. 0.9548	b. 0.8647 c.	. 0.1353	d. 0.04524				
3.	The yearly incomes for a gr and standard deviation $\sigma = 3$ income over \$70,000 is: a. 228	oup of professional people \$5000. Then out of 20,000 b. 456 c	e is normally dist) of these people, . 912	ributed with mean $\mu = $ \$60,000 the number who have a yearly d. 10228				

Question Three (10 Points)

1. If on the average three cars arrive per hour at KFUPM emergency medical center. Find the probability that there will be at most 45 minutes waiting between arrival of 2 successive cars.

2. If *X* is uniformly distributed over the interval [-3, 2], find P($X \ge -1$).

NOTE: For some questions above, you may use your z-table or one of the following areas where										
	z_{0}	0.2	0.5	1.5	2.0	2.2	2.25			
	$P\left(Z \leq z_0\right)$	0.5793	0.6915	0.9332	0.9772	0.9861	0.9878			

		STAT 211, Quiz 3 T112	Form: D	
Name	2:		ID#:	Serial#:
Questi	ion One (4 Points)			
Write	True if the statement is true of	or <u>False</u> if not:		
1.	The probability of success in	n the binomial distribution	n can be approximate	ed well by the normal
	distribution if $np \le 5$ and nq	<u>≥</u> 5.		
2.	The mean and the variance of	of an exponential random	variable are differen	ıt
3.	P(X = 45) is zero if X is a co	ntinuous random variable		
4.	In the uniform distribution,	all intervals of equal lengt	h have the different	probability.
Questi Choos 1.	ton Two (6 Points) e the <u>Best</u> answer. If the ratio of defective iter replacement, then the proba- a. 0.000684752	ms in a shipment is 20% bility of at least 40 defecti b. 0.0015 c	, a sample of size 3 ve item is approxim . 0.9985	300 is taken randomly with ately: d. 0.9993
2.	Customers arrive at an ATM will arrive in 6 minutes? a. 0.9548	I teller at a rate of 20 perb. 0.8647c	hour. What is the pr . 0.1353	d. 0.04524
3.	The yearly incomes for a group and standard deviation $\sigma = 5$ income over \$70,000 is: a. 228	bup of professional people 5000. Then out of 20,000 b. 456 c.	e is normally distribu) of these people, the . 912	uted with mean μ = \$60,000 e number who have a yearly d. 10228

Question Three (10 Points)

1. If on the average three cars arrive per hour at KFUPM emergency medical center. Find the probability that there will be at least 45 minutes waiting between arrival of 2 successive cars.

2. If *X* is uniformly distributed over the interval [-3, 2], find P($X \le -1$).

NOTE: For some questions above, you may use your z-table or one of the following areas where										
	z_{0}	0.2	0.5	1.5	2.0	2.2	2.25			
	$P\left(Z \leq z_0\right)$	0.5793	0.6915	0.9332	0.9772	0.9861	0.9878			