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## DEPARTMENT OF MATHEMATICS UNIT - I PROBABILITY AND RANDOM VARIABLES

Normal Distribution:

If x is a continuous mandom vaulable which follows normal distribution,  $f(x) = \frac{1}{6\sqrt{2\pi}} e^{-\frac{1}{4}\left(\frac{x-u}{6}\right)^{4}}$ 

Note:  $M_{\chi}(t) = e^{\pm u + \frac{t^2 \delta^2}{2}}$ 

E(x) = 11

Vau(x) = 69

SD = \var = \square = 6

Properties/characteristics of Normal Distribute to The curve is bein shaped and symmetric about the origin.

- + the curive has a single peak it. Unimodel.
- + The mean of the normal destribution lies at the centre of the wolve.
- \* In Normal distribution, mean, median & mode are cornside.





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#### Note:

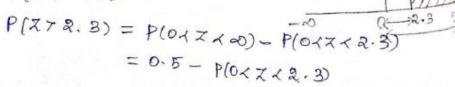
$$* x = \frac{x - \mu}{\sigma}$$

$$* p(-\infty x x < 0) = -0.5$$

$$* p(0 < x < \infty) = 0.5$$

#### Example:

J. P(77 2.3)



$$g(x) = P(x) - 2.3)$$

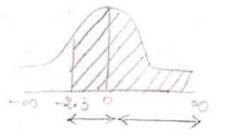
$$p(x) - 2.3) = P(x.3 < x < 0)$$

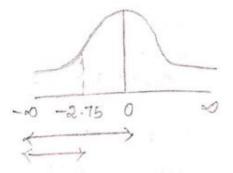
$$+ P(x < x < 0)$$

$$P(7x-2.75) = P(-\infty x x x x 0)$$
  
-  $P(-2.75 x x x x 0)$ 

$$= P(0 < 7 < \infty) + P(0 < 7 < 2.75)$$

$$= 0.5 + P(0 < 7 < 2.75)$$









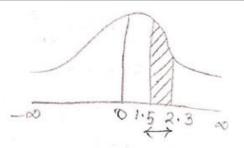
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A. P(1.5イスイス.3)

P(1.5 < Z < 2.3)

= P(0x x x 2.3) - P(0xxx1.5)



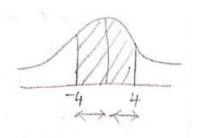
同. P(-4~X~4)

P1-4~ ~~ 4)

= P(-4 < x < 0) + P(0 < x < 4)

= P(0/2/4) + P(0/2/4)

= & P10 < Z L 4)







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#### **DEPARTMENT OF MATHEMATICS** UNIT - I PROBABILITY AND RANDOM VARIABLES

In a test on 2000 electric bulbs, it was four. that the late of the production make, was normal dreshappinge not an average life of 2040 hours on S.D. of 60 hours. Estimate the number of bulbs Is. to burn for i). mone than 2150 hours, ii) less the 1950 hours and iii) more than 1920 hours but less than sibo hours.

Soln .:

Mean: 11 = 2040 hours

8.D: 6 = 60 hows

1). P(x > 2150)

Let 
$$7 = \frac{2 - 11}{6}$$

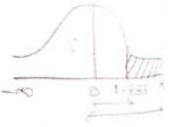
$$= \frac{2150 - 2040}{60}$$

:. P(x Z 2150) = P(Z Z 1. 833)

= 0.034

= 0.34 x 2000

= 67. 2



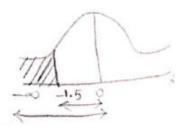




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11) 
$$P(x \le 1950)$$
  
Let  $z = \frac{92 - 11}{5}$   
 $= \frac{1950 - 2040}{60}$   
 $z = -1.5$ 



$$p(x \le 1950) = P(7 \le -1.5)$$

$$= P(-\infty < 7 < 0) - P(-1.5 < 7 < 0)$$

$$= P(0 < 7 < 0) - P(0 < 7 < 1.5)$$

$$= 0.5 - 0.4332$$

$$= 0.067$$

$$= 0.067 \times 2000$$

$$= 134$$

III) Morie than 1920 his and 10% than 2160 hrs.

P(1920
$$\le \times \le 2160$$
)

Let  $\times = 1920 \Rightarrow \times = \frac{1920 - 2040}{60} = -9$ 
 $\times = 2160 \Rightarrow \times = \frac{5160 - 9040}{60} = 2$ 



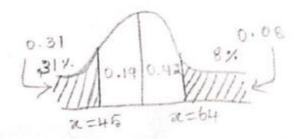


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$$P(1920 \le x \le 2160) = P(-3 \le x \le 2)$$
 $= & P(0 \le x \le 2)$ 
 $= & [0.4772]$ 
 $= 0.954$ 
 $= 0.954 \times 2000$ 
 $= 1908$ 

9]. In a Normal declipation, 31% of the 9+ems are under 45 and 8% are over 64. find mean & S.D.



Let 
$$z = \frac{x - u}{6}$$

when  $x = 45$ 

0.19 table value

-0.56 = 45 - u

 $u - 0.56 = 45$ 
 $u - 0.56 = 45$ 

$$96 = 64$$
  
 $1.41 = 64 - 11$   
 $1.416 = 64 - 11$   
 $1.416 = 64$   
 $1.416 = 64$   
 $1.416 = 64$ 





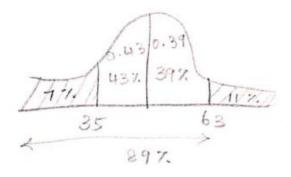
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Solveng (1) and (2),  

$$-1.96 = -19$$
  
 $6 = -19$   
 $-1.9$   
 $6 = 10$   
Subs.  $6 = 10$  Pn (1)  
 $4 = 45 + 0.56$   
 $= 45 + 0.5(10)$   
 $= 45 + 5$   
 $M = 50$ 

3). In a destrabution exactly ocemal 7 % of one Hems are under 35 and 89% are under 63. What are the means SD of distribution.







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when 
$$x = 35$$
 $x = \frac{x - u}{6}$ 
 $x = \frac{x - u}{6}$ 





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#### AREA UNDER NORMAL CURVE TABLE OF AREAS

0	$\downarrow Z \rightarrow 0$ 1 2 3 4 5 6 7 8 9										
1.         .0398         .0438         .0478         .0517         .0557         .0596         .0636         .0675         .0714         .0753           2.         .0793         .0832         .0871         .0910         .0480         .0987         .1026         .1064         .1103         .1141           3.         .1179         .1217         .1255         .1293         .1331         .1368         .1406         .1443         .1480         .1517           4.         .1554         .1591         .1628         .1664         .1700         .1736         .1772         .1808         .1844         .1879           5.         .1915         .1950         .1985         .2019         .2054         .2088         .2123         .2157         .2190         .2224           5.         .1915         .1950         .2939         .2967         .2939         .2422         .2454         .2486         .2517         .2590           7.         .2580         .2611         .2642         .2663         .2703         .2734         .2764         .2294         .2823         .2823         .2823         .2823         .2823         .2823         .2823         .2823         .2823 <t< th=""><th></th><th>0</th><th>(1)</th><th>2</th><th>3</th><th>4</th><th>5</th><th>6</th><th>7</th><th>8</th><th>9</th></t<>		0	(1)	2	3	4	5	6	7	8	9
2.         .0793         .0832         .0871         .0910         .0480         .0987         .1026         .1064         .1103         .1141           3.         .1179         .1217         .1255         .1293         .1331         .1368         .1406         .1443         .1480         .1519           4.         .1554         .1591         .1628         .1664         .1700         .1736         .1772         .1808         .1844         .1879           5.         .1915         .1950         .1985         .2019         .2054         .2088         .2123         .2157         .2190         .2224           6.         .2257         .2291         .2324         .2357         .2389         .2422         .2454         .2486         .2517         .2549           7.         .2580         .2611         .2642         .2673         .2703         .2734         .2764         .2994         .2823         .2852           8.         .2881         .2910         .2995         .3023         .3315         .3340         .3365         .3389           1.0         .3413         .3438         .3461         .3485         .3508         .3531         .3554         .357		100000000000000000000000000000000000000								.0319	.0359
3         .1179         .1217         .1255         .1293         .1331         .1368         .1406         .1443         .1480         .1517           4         .1554         .1591         .1628         .1664         .1700         .1736         .1772         .1808         .1844         .1879           5         .1915         .1950         .1985         .2019         .2054         .2088         .2123         .2157         .2190         .2224           6         .2257         .2291         .2324         .2357         .2389         .2422         .2454         .2486         .2517         .2289           7         .2580         .2611         .2642         .2673         .2703         .2734         .2764         .2794         .2823         .2852           8         .2881         .2910         .2939         .2967         .2995         .3023         .3051         .3078         .3106         .3133           9         .3186         .3212         .3238         .3264         .3289         .3315         .3377         .3593         .3591         .3616         .3413         .3458         .3793         .3749         .3770         .3790         .3810         .3830			22.402.454.455	330000000000000000000000000000000000000						.0714	.0753
4         .1554         .1591         .1628         .1664         .1700         .1736         .1772         .1808         .1844         .1879           .5         .1915         .1950         .1985         .2019         .2054         .2088         .2123         .2157         .2190         .2224           .6         .2257         .2291         .2324         .2357         .2389         .2422         .2454         .2486         .2517         .2549           .7         .2580         .2611         .2642         .2673         .2703         .2734         .2764         .2794         .2823         .2852           .8         .2881         .2910         .2939         .2967         .2995         .3023         .3051         .3078         .3106         .3133         .9         .3159         .3186         .3212         .3238         .3264         .3289         .3315         .3340         .3365         .3889         .3881         .3907         .3925         .3944         .3962         .3980         .3997         .4011         .413         .4134         .4462         .4471         .4441         .4418         .4429         .4441         .4462         .4471         .4476         .4471		1600 1410 1500	C Indeed Street		100000000000000000000000000000000000000		F01-71-01	.1026	House and the second		.1141
.5         .1915         .1950         .1985         .2019         .2054         .2088         .2123         .2157         .2190         .2244           .6         .2257         .2291         .2324         .2357         .2389         .2422         .2454         .2486         .2517         .2549           .7         .2580         .2611         .2642         .2673         .2703         .2734         .2764         .2794         .2823         .2852           .8         .2881         .2910         .2939         .2967         .2995         .3023         .3051         .3078         .3106         .3133           .9         .3159         .3186         .3212         .3238         .3264         .3289         .3315         .3340         .3365         .3389           1.0         .3413         .3435         .3461         .3485         .3503         .3531         .3554         .3577         .3599         .3611           1.1         .3665         .3686         .3708         .3729         .3749         .3770         .3790         .3810         .3830           1.2         .3849         .3869         .3888         .3907         .3925         .3944         .3	110000			1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1	A CONTRACTOR OF THE PARTY OF TH	.1331	.1368	.1406	.1443	.1480	.1517
6         .2257         .2291         .2324         .2357         .2389         .2422         .2454         .2486         .2517         .2549           .7         .2580         .2611         .2642         .2673         .2703         .2734         .2764         .2794         .2823         .2852           .8         .2881         .2910         .2939         .2967         .2995         .3023         .3051         .3078         .3106         .3133           .9         .3159         .3186         .3212         .3238         .3264         .3289         .3315         .3343         .3365         .3389           1.0         .3413         .3438         .3461         .3485         .3508         .3531         .3554         .3577         .3599         .3621           1.1         .3643         .3665         .3686         .3708         .3729         .3749         .3770         .3790         .3810         .3830           1.2         .3849         .3869         .3888         .3907         .3925         .3944         .3962         .3980         .3997         .4015           1.3         .4032         .40494         .4066         .4082         .4099         .	.4	.1554	.1591	.1628	.1664	.1700	.1736	.1772	.1808	.1844	.1879
6.         2257         2291         2324         2357         2389         2422         2454         2486         2517         2549           7.         2580         2611         2642         2673         2703         2734         2764         2794         2823         2851         2851         2910         2939         2967         2995         3023         3051         3076         3106         3133         39         3159         3186         3212         3238         3264         3289         3315         3340         3365         3389           1.0         3413         3438         3461         3485         3508         3531         3577         3599         3621           1.1         3643         3665         3686         3708         3729         3749         3770         3790         3810         3830           1.2         3849         3369         3888         3907         3925         3944         3962         3980         3997         4015           1.3         4032         4049         4066         4082         4099         4115         4131         4147         4162         4177           1.4         4192 </td <td>.5</td> <td>.1915</td> <td>.1950</td> <td>*.1985</td> <td>.2019</td> <td>.2054</td> <td>.2088</td> <td>.2123</td> <td>.2157</td> <td>.2190</td> <td>.2224</td>	.5	.1915	.1950	*.1985	.2019	.2054	.2088	.2123	.2157	.2190	.2224
7.         2580         2611         2642         2673         2703         2734         2764         2794         2823         2852           8.         2881         2910         2939         2967         2995         3023         3051         3078         3106         3133           9         3159         3186         3212         3238         3264         3289         3315         3340         3365         3389           1.0         3413         3438         3461         3485         3508         3513         3574         3770         3790         3810         3830           1.2         3849         3869         3888         3907         3925         3944         3962         3980         3997         4015           1.3         4032         4049         4066         4082         4099         4115         4131         4147         4162         4177           1.4         4192         4207         4222         4236         4251         4265         4279         4292         4306         4319           1.5         4332         4345         4357         4370         4382         4394         4406         4418	.6	.2257	.2291	.2324	.2357	.2389	-2422	.2454	.2486	.2517	
8         2881         2910         2939         2967         2995         3023         3051         3078         3166         3133           9         3159         3186         3212         3238         3264         3289         3315         3340         3365         3389           1.0         3413         3438         3461         3485         3508         3531         3577         3599         3621           1.1         3643         3665         3686         3708         3729         3770         3790         3810         3830           1.2         3849         3869         388         3907         3925         3944         3962         3980         3997         4015           1.3         4032         4049         4066         4082         4099         4115         4131         4147         4162         4177           1.4         4192         4207         4222         4236         4251         4265         4279         4292         4306         4319           1.5         4332         4345         4357         4382         4394         4406         4418         4429         4441           1.6	.7	.2580	.2611	.2642	.2673						
.9         .3159         .3186         .3212         .3238         .3264         .3289         .3315         .3340         .3365         .3389           1.0         .3413         .3438         .3461         .3485         .3508         .3531         .3554         .3577         .3599         .3621           1.1         .3643         .3665         .3686         .3708         .3729         .3749         .3770         .3790         .3810         .3830           1.2         .3849         .3869         .3888         .3907         .3925         .3944         .3962         .3980         .3997         .4015           1.3         .4032         .4049         .4066         .4082         .4099         .4115         .4131         .4147         .4162         .4177           1.4         .4192         .4207         .4222         .4236         .4251         .4265         .4279         .4292         .4306         .4319           1.5         .4332         .4345         .4357         .4370         .4382         .4394         .4406         .4418         .4429         .4441           1.6         .4452         .4463         .4474         .4444         .4495 <t< td=""><td>.8</td><td>.2881</td><td>.2910</td><td>.2939</td><td></td><td>.2995</td><td></td><td>The state of the s</td><td></td><td>.3106</td><td></td></t<>	.8	.2881	.2910	.2939		.2995		The state of the s		.3106	
1.1         .3643         .3665         .3686         .3708         .3729         .3749         .3770         .3790         .3810         .3830           1.2         .3849         .3869         .3888         .3907         .3925         .3944         .3962         .3980         .3997         .4015           1.3         .4032         .4049         .4066         .4082         .4099         .4115         .4131         .4147         .4162         .4177           1.4         .4192         .4207         .4222         .4236         .4251         .4265         .4279         .4292         .4306         .4319           1.5         .4332         .4345         .4357         .4370         .4382         .4394         .4406         .4418         .4429         .4411           1.6         .4452         .4463         .4474         .4484         .4495         .4505         .4515         .4525         .4533         .4811           1.6         .4452         .4463         .4474         .4484         .4495         .4505         .4515         .4525         .4533           1.8         .4641         .4649         .4656         .4664         .4671         .4678         <		.3159	.3186	25,495,500	The state of the s	77.5					
1.1         .3643         .3665         .3686         .3708         .3729         .3749         .3770         .3790         .3810         .3830           1.2         .3849         .3869         .3888         .3907         .3925         .3944         .3962         .3980         .3997         .4015           1.3         .4032         .4049         .4066         .4082         .4099         .4115         .4131         .4147         .4162         .4177           1.4         .4192         .4207         .4222         .4236         .4251         .4265         .4279         .4292         .4306         .4319           1.5         .4332         .4345         .4357         .4370         .4382         .4394         .4406         .4418         .4429         .4411           1.6         .4452         .4463         .4474         .4484         .4495         .4505         .4515         .4525         .4533         .4811           1.6         .4452         .4463         .4474         .4484         .4495         .4505         .4515         .4525         .4533           1.8         .4641         .4649         .4656         .4664         .4671         .4678         <	1.0	.3413	.3438	3461	3485	3508	3531	3554	3577	3590	3621
1.2         .3849         .3869         .3888         .3907         .3925         .3944         .3962         .3980         .3997         .4015           1.3         .4032         .4049         .4066         .4082         .4099         .4115         .4131         .4147         .4162         .4177           1.4         .4192         .4207         .4222         .4236         .4251         .4265         .4279         .4292         .4306         .4319           1.5         .4332         .4345         .4357         .4370         .4382         .4394         .4406         .4418         .4429         .4441           1.6         .4452         .4463         .4474         .4484         .4495         .4505         .4515         .4525         .4535         .4545           1.7         .4554         .4564         .4573         .4582         .4591         .4599         .4603         .4616         .4625         .4633           1.8         .4641         .4649         .4656         .4664         .4671         .4678         .4686         .4693         .4669         .4767           2.0         .4772         .4778         .4788         .4793         .4798         <			10.000000000000000000000000000000000000			111000000000000000000000000000000000000	155	122000000000000000000000000000000000000	335553555	2000 0000000000000000000000000000000000	
1.3	0.000		1900 8 6660	407 100 100		UP-003-27-55-00-6-1		0.4000000000000000000000000000000000000	The second second second second		**************************************
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1.5					Contract Con	100000000000000000000000000000000000000			T0780788888	A. A. C. S. S. S. S. S. C. S.	150000000000000000000000000000000000000
1.6       .4452       .4463       .4474       .4484       .4495       .4505       .4515       .4525       .4535       .4541         1.7       .4554       .4564       .4573       .4582       .4591       .4599       .4603       .4616       .4625       .4633         1.8       .4641       .4649       .4656       .4664       .4671       .4678       .4686       .4693       .4699       .4706         1.9       .4713       .4719       .4726       .4732       .4738       .4744       .4750       .4756       .4761       .4767         2.0       .4772       .4778       .4783       .4788       .4793       .4798       .4803       .4808       .4812       .4817         2.1       .4821       .4826       .4830       .4834       .4838       .4842       .4846       .4857       .4850         2.2       .4861       .4864       .4868       .4871       .4875       .4879       .4881       .4884       .4887       .4890         2.3       .4893       .4896       .4898       .4901       .4904       .4995       .4900       .4911       .4913       .4916         2.4       .4918       .4920	-			.,,,,,	.4250	.4231	.4200	,42/9	.4272	.4306	.4519
1.7       .4554       .4564       .4573       .4582       .4591       .4599       .4603       .4616       .4625       .4631         1.8       .4641       .4649       .4656       .4664       .4671       .4678       .4686       .4693       .4699       .4706         1.9       .4713       .4719       .4726       .4732       .4738       .4744       .4750       .4756       .4761       .4767         2.0       .4772       .4778       .4783       .4788       .4793       .4798       .4803       .4808       .4812       .4817         2.1       .4821       .4826       .4830       .4834       .4838       .4842       .4846       .4850       .4857         2.2       .4861       .4864       .4868       .4871       .4875       .4879       .4881       .4884       .4887       .4890         2.3       .4893       .4896       .4898       .4901       .4904       .4995       .4900       .4911       .4913       .4916         2.4       .4918       .4920       .4922       .4927       .4929       .4931       .4932       .4934       .4934         2.5       .4938       .4946       .4948	1.5		141147777773	P. 1753 (1757)	.4370	.4382	.4394	.4406	.4418	.4429	.4441
1.7       .4554       .4564       .4573       .4582       .4591       .4599       .4603       .4616       .4625       .4633         1.8       .4641       .4649       .4656       .4664       .4671       .4678       .4686       .4693       .4699       .4706         1.9       .4713       .4719       .4726       .4732       .4738       .4744       .4750       .4756       .4761       .4767         2.0       .4772       .4778       .4783       .4788       .4793       .4798       .4803       .4808       .4812       .4817         2.1       .4821       .4826       .4830       .4834       .4838       .4842       .4846       .4850       .4857       .4852         2.2       .4861       .4864       .4868       .4871       .4875       .4879       .4881       .4884       .4887       .4890         2.3       .4893       .4896       .4898       .4901       .4904       .4995       .4900       .4911       .4913       .4916         2.4       .4918       .4920       .4922       .4927       .4929       .4931       .4932       .4934       .4934         2.5       .4938       .4940	1.6	.4452	.4463	.4474	.4484	.4495	.4505	.4515	.4525	.4535	.4545
1.8       .4641       .4649       .4656       .4664       .4671       .4678       .4686       .4693       .4699       .4706         1.9       .4713       .4719       .4726       .4732       .4738       .4744       .4750       .4756       .4761       .4767         2.0       .4772       .4778       .4783       .4788       .4793       .4798       .4803       .4808       .4812       .4817         2.1       .4821       .4826       .4830       .4834       .4838       .4842       .4846       .4850       .4854       .4857         2.2       .4861       .4864       .4868       .4871       .4875       .4879       .4881       .4884       .4887       .4890         2.3       .4893       .4896       .4898       .4901       .4904       .4995       .4900       .4911       .4913       .4916         2.4       .4918       .4920       .4922       .4925       .4927       .4929       .4931       .4932       .4934       .4936         2.5       .4938       .4940       .4941       .4943       .4945       .4946       .4948       .4959       .4951       .4952         2.7       .4965	1.7	.4554	.4564	.4573	.4582	.4591	.4599	.4603	.4616	.4625	.4633
1.9       .4713       .4719       .4726       .4732       .4738       .4744       .4750       .4756       .4761       .4767         2.0       .4772       .4778       .4783       .4788       .4793       .4798       .4803       .4808       .4812       .4817         2.1       .4821       .4826       .4830       .4834       .4838       .4842       .4846       .4850       .4854       .4857         2.2       .4861       .4864       .4868       .4871       .4875       .4879       .4881       .4884       .4887       .4890         2.3       .4893       .4896       .4898       .4901       .4904       .4995       .4900       .4911       .4913       .4916         2.4       .4918       .4920       .4922       .4925       .4927       .4929       .4931       .4932       .4934       .4936         2.5       .4938       .4940       .4941       .4943       .4945       .4946       .4948       .4959       .4951       .4952         2.6       .4953       .4956       .4957       .4959       .4960       .4961       .4962       .4963       .4952         2.7       .4965       .4966	1.8	.4641	.4649	.4656	.4664	.4671	.4678	.4686	.4693		20000000
2.1       .4821       .4826       .4830       .4834       .4838       .4842       .4846       .4850       .4854       .4857         2.2       .4861       .4864       .4868       .4871       .4875       .4879       .4881       .4884       .4887       .4890         2.3       .4893       .4896       .4898       .4901       .4904       .4995       .4900       .4911       .4913       .4916         2.4       .4918       .4920       .4922       .4925       .4927       .4929       .4931       .4932       .4934       .4936         2.5       .4938       .4940       .4941       .4943       .4945       .4946       .4948       .4959       .4934       .4936         2.5       .4938       .4940       .4941       .4943       .4945       .4946       .4948       .4959       .4934       .4936         2.6       .4953       .4955       .4956       .4957       .4959       .4960       .4961       .4962       .4963       .4952         2.7       .4965       .4967       .4958       .4969       .4970       .4971       .4972       .4973       .4973       .4974         2.9       .4981	1.9	.4713	.4719	.4726	.4732	.4738	.4744	.4750	.4756	.4761	200000000000000000000000000000000000000
2.1       .4821       .4826       .4830       .4834       .4838       .4842       .4846       .4850       .4854       .4857         2.2       .4861       .4864       .4868       .4871       .4875       .4879       .4881       .4884       .4887       .4890         2.3       .4893       .4896       .4898       .4901       .4904       .4995       .4900       .4911       .4913       .4916         2.4       .4918       .4920       .4922       .4925       .4927       .4929       .4931       .4932       .4934       .4936         2.5       .4938       .4940       .4941       .4943       .4945       .4946       .4948       .4959       .4931       .4932       .4934       .4936         2.5       .4938       .4940       .4941       .4943       .4945       .4946       .4948       .4959       .4931       .4932       .4934       .4936         2.6       .4953       .4955       .4956       .4957       .4959       .4960       .4961       .4962       .4963       .4952         2.7       .4965       .4967       .4958       .4969       .4970       .4971       .4972       .4973       .4973 <td>2.0</td> <td>.4772</td> <td>.4778</td> <td>.4783</td> <td>.4788</td> <td>.4793</td> <td>.4798</td> <td>.4803</td> <td>.4808</td> <td>4812</td> <td>4817</td>	2.0	.4772	.4778	.4783	.4788	.4793	.4798	.4803	.4808	4812	4817
2.2       .4861       .4864       .4868       .4871       .4875       .4879       .4881       .4884       .4887       .4890         2.3       .4893       .4896       .4898       .4901       .4904       .4995       .4900       .4911       .4913       .4916         2.4       .4918       .4920       .4922       .4925       .4927       .4929       .4931       .4932       .4934       .4936         2.5       .4938       .4940       .4941       .4943       .4945       .4946       .4948       .4959       .4931       .4932       .4934       .4936         2.6       .4953       .4955       .4956       .4957       .4959       .4960       .4961       .4962       .4963       .4952         2.7       .4965       .4967       .4958       .4969       .4970       .4971       .4972       .4973       .4974         2.8       .4974       .4975       .4976       .4977       .4978       .4979       .4979       .4980       .4981         2.9       .4981       .4982       .4983       .4984       .4984       .4985       .4986       .4986         3.0       .4987       .4987       .4983	2.1	.4821	.4826	.4830	.4834	.4838		500000000000000000000000000000000000000	1.007535753000		110000000000000000000000000000000000000
2.3       .4893       .4896       .4898       .4901       .4904       .4995       .4900       .4911       .4913       .4916         2.4       .4918       .4920       .4922       .4925       .4927       .4929       .4931       .4932       .4934       .4936         2.5       .4938       .4940       .4941       .4943       .4945       .4946       .4948       .4959       .4951       .4952         2.6       .4953       .4955       .4956       .4957       .4959       .4960       .4961       .4962       .4963       .4952         2.7       .4965       .4966       .4967       .4958       .4969       .4970       .4971       .4972       .4973       .4974         2.8       .4974       .4975       .4976       .4977       .4977       .4978       .4979       .4979       .4980       .4981         2.9       .4981       .4982       .4983       .4984       .4984       .4985       .4985       .4986       .4986         3.0       .4987       .4987       .4983       .4988       .4989       .4989       .4989       .4990       .4990       .4993         3.1       .4990       .4991	2.2	.4861	.4864	.4868	.4871	.4875	.4879	0.0000000000000000000000000000000000000	100000000000000000000000000000000000000		
2.4       .4918       .4920       .4922       .4925       .4927       .4929       .4931       .4932       .4934       .4936         2.5       .4938       .4940       .4941       .4943       .4945       .4946       .4948       .4959       .4951       .4952         2.6       .4953       .4955       .4956       .4957       .4959       .4960       .4961       .4962       .4963       .4952         2.7       .4965       .4966       .4967       .4958       .4969       .4970       .4971       .4972       .4973       .4974         2.8       .4974       .4975       .4976       .4977       .4977       .4978       .4979       .4979       .4980       .4981         2.9       .4981       .4982       .4982       .4983       .4984       .4984       .4985       .4985       .4986       .4986         3.0       .4987       .4987       .4983       .4988       .4989       .4989       .4989       .4990       .4990       .4990         3.1       .4990       .4991       .4991       .4991       .4992       .4992       .4992       .4992       .4993       .4993       .4993       .4993       .4993 <td>2.3</td> <td>.4893</td> <td>.4896</td> <td>.4898</td> <td>.4901</td> <td>.4904</td> <td>.4995</td> <td></td> <td></td> <td>190 300 300 10</td> <td>100000000000000000000000000000000000000</td>	2.3	.4893	.4896	.4898	.4901	.4904	.4995			190 300 300 10	100000000000000000000000000000000000000
2.6       .4953       .4955       .4956       .4957       .4959       .4960       .4961       .4962       .4963       .4952         2.7       .4965       .4966       .4967       .4958       .4969       .4970       .4971       .4972       .4973       .4974         2.8       .4974       .4975       .4976       .4977       .4977       .4978       .4979       .4979       .4980       .4981         2.9       .4981       .4982       .4982       .4983       .4984       .4984       .4985       .4985       .4986       .4986         3.0       .4987       .4987       .4983       .4988       .4989       .4989       .4989       .4990       .4990       .4990         3.1       .4990       .4991       .4991       .4991       .4992       .4992       .4992       .4993       .4993       .4993         3.2       .4993       .4993       .4994       .4994       .4994       .4995       .4995       .4995       .4995       .4995       .4995       .4995       .4996       .4996       .4996       .4996       .4996       .4996       .4996       .4996       .4997       .4997       .4997       .4997       .499	2.4	.4918	.4920	.4922	.4925	.4927		E2845423000	12 12 12 12 12 12	201 B. C. S. S. C.	COXX25.6
2.6       .4953       .4955       .4956       .4957       .4959       .4960       .4961       .4962       .4963       .4952         2.7       .4965       .4966       .4967       .4958       .4969       .4970       .4971       .4972       .4973       .4974         2.8       .4974       .4975       .4976       .4977       .4977       .4978       .4979       .4979       .4980       .4981         2.9       .4981       .4982       .4982       .4983       .4984       .4984       .4985       .4985       .4986       .4986         3.0       .4987       .4987       .4983       .4988       .4989       .4989       .4989       .4990       .4990       .4990         3.1       .4990       .4991       .4991       .4991       .4992       .4992       .4992       .4993       .4993       .4993         3.2       .4993       .4993       .4994       .4994       .4994       .4995       .4995       .4995       .4995       .4995       .4995       .4995       .4996       .4996       .4996       .4996       .4996       .4996       .4996       .4996       .4997       .4997       .4997       .4997       .499	2.5	.4938	.4940	.4941	.4943	.4945	4946	4049	4050	4051	4052
2.7       .4965       .4966       .4967       .4958       .4969       .4970       .4971       .4972       .4973       .4974         2.8       .4974       .4975       .4976       .4977       .4977       .4978       .4979       .4979       .4980       .4981         2.9       .4981       .4982       .4982       .4983       .4984       .4984       .4985       .4985       .4986       .4986         3.0       .4987       .4987       .4983       .4988       .4989       .4989       .4989       .4990       .4990         3.1       .4990       .4991       .4991       .4991       .4992       .4992       .4992       .4993       .4993       .4993         3.2       .4993       .4993       .4994       .4994       .4994       .4994       .4995       .4995       .4995       .4995         3.3       .4995       .4995       .4996       .4996       .4996       .4996       .4996       .4996       .4996       .4996       .4997         3.4       .4997       .4997       .4997       .4997       .4997       .4997       .4997       .4997       .4997       .4997       .4998       .4998       .4998 <td>7000000</td> <td>7.7.5</td> <td>The Control of the Co</td> <td>215.52.53</td> <td>0.00 Per 20.00 P</td> <td></td> <td>F 50 100 100 100 100 100 100 100 100 100</td> <td>8000000</td> <td></td> <td></td> <td></td>	7000000	7.7.5	The Control of the Co	215.52.53	0.00 Per 20.00 P		F 50 100 100 100 100 100 100 100 100 100	8000000			
2.8       .4974       .4975       .4976       .4977       .4977       .4978       .4979       .4979       .4980       .4981         2.9       .4981       .4982       .4982       .4983       .4984       .4984       .4985       .4985       .4986       .4986         3.0       .4987       .4987       .4983       .4988       .4989       .4989       .4989       .4990       .4990         3.1       .4990       .4991       .4991       .4991       .4992       .4992       .4992       .4993       .4993       .4993         3.2       .4993       .4993       .4994       .4994       .4994       .4994       .4995       .4995       .4995       .4995         3.3       .4995       .4995       .4996       .4996       .4996       .4996       .4996       .4996       .4996       .4996       .4996       .4997       .4997       .4997       .4997       .4997       .4997       .4997       .4997       .4997       .4997       .4997       .4997       .4998       .4998       .4998       .4998       .4998       .4998       .4999       .4999       .4999       .4999       .4999       .4999       .4999       .4999						27.5.1.5.1		60000000			
2.9       .4981       .4982       .4982       .4983       .4984       .4984       .4985       .4985       .4986       .4986         3.0       .4987       .4987       .4983       .4988       .4989       .4989       .4989       .4990       .4990       .4990         3.1       .4990       .4991       .4991       .4992       .4992       .4992       .4993       .4993       .4993         3.2       .4993       .4993       .4994       .4994       .4994       .4994       .4995       .4995       .4995       .4995       .4995       .4996       .4996       .4996       .4996       .4996       .4996       .4996       .4996       .4996       .4996       .4997       .4997       .4997       .4997       .4997       .4997       .4997       .4997       .4997       .4997       .4997       .4997       .4997       .4998       .4998       .4998       .4998       .4998       .4998       .4998       .4998       .4998       .4998       .4999       .4999       .4999       .4999       .4999       .4999       .4999       .4999       .4999       .4999       .4999       .4999       .4999       .4999       .4999       .4999       .4999					100000000000000000000000000000000000000			110000000000000000000000000000000000000	100000000000000000000000000000000000000		1 1 1 1 1 1 1 1
3.0       .4987       .4987       .4983       .4988       .4989       .4989       .4989       .4990       .4990       .4990         3.1       .4990       .4991       .4991       .4991       .4992       .4992       .4992       .4993       .4993       .4993         3.2       .4993       .4993       .4994       .4994       .4994       .4994       .4995       .4995       .4995       .4995       .4996       .4996       .4996       .4996       .4996       .4996       .4996       .4996       .4996       .4996       .4997       .4997       .4997       .4997       .4997       .4997       .4997       .4997       .4997       .4997       .4997       .4997       .4998       .4998       .4998       .4998       .4998       .4998       .4998       .4998       .4998       .4998       .4999 <td></td> <td></td> <td></td> <td></td> <td></td> <td>111111111111111111111111111111111111111</td> <td></td> <td>100000000</td> <td>100000000000000000000000000000000000000</td> <td>10.000000000000000000000000000000000000</td> <td>7.55555</td>						111111111111111111111111111111111111111		100000000	100000000000000000000000000000000000000	10.000000000000000000000000000000000000	7.55555
3.1		4000	1000			30330400001	2372.7	11200	.1700	.4200	.1700
3.2							.4989	.4989	.4989	.4990	.4990
3.3		1.00					.4992	.4992	.4992	.4993	
3.3	A					7.7.	.4994	.4994	.4995	.4995	.4995
3.5 .4998 .4998 .4998 .4998 .4998 .4998 .4998 .4998 .4998 .4998 .4998 .4998 .4998 .4999 .4		100000000000000000000000000000000000000		And the second second		.4996	.4996	.4996	.4996	.4996	.4997
3.6	3.4	.4997	.4997	.4997	.4997	.4997	.4997	.4997	.4997	.4997	.4998
3.6			.4998	.4998	.4998	.4998	.4998	4998	4998	4998	4998
3.7			.4998	.4999	.4999				201/23/23/23		
3.8			.4999	.4999	.4999	1000 1000 1000 1000	5775000		0.0000000000000000000000000000000000000		
39   5000   5000   5000   5000   5000	100000000000000000000000000000000000000	100000000000000000000000000000000000000	.4999	.4999	.4999					1000	
	3.9	.5000	.5000	.5000	.5000	.5000	.5000	.5000	.5000	.5000	,5000