

20013

私立臺北醫學院 1170 學年度第 一 學期 期中 考試 (試) 命題紙  
(期末)

系級	科目	授課教師	考試日期	學號	姓名
牙一	分散積分	潘力誠	____年____月____日第____節		

\*①請注意本試題共 2 張。如發現頁數不足及空白頁或缺印，應當場請求補齊，否則缺少部份概以零分計。  
 ②每張試題卷務必填寫(學號)、(姓名)。

★可用計算機

- (20%) 1. Determine the length of the curve given by the graph of  $y = f(x) = x^{\frac{3}{2}}$  between  $a = \frac{5}{9}$  and  $b = \frac{21}{9}$  and partition size  $n=8$ .
- (20%) 2. Suppose that a quantity  $X$  is normally distributed with mean 3 and standard deviation 2. Find the fraction of the population that falls into the intervals:  
 10%(1)  $P(X=[2, 5])$     5%(2)  $P(X < 2)$     5%(3)  $P(X > 5)$
- (20%) 3. A screening test for a disease show a positive test result in 90% of all cases when the disease is actually present and in 15% of all cases when it is not. Assume that the prevalence of the disease is 1 in 100. If the test is administered to a randomly chosen individual, what is the probability that the result if negative?
- (20%) 4. Assume a 1:1 sex ratio. A woman who is a carrier of hemophilia has four children with a man who is not hemophilic. What is the probability that she has one daughter who is not a carrier, one daughter who is a carrier, one son who is, and one son who is not hemophilic?
- (20%) 5. A class of 28 people collected the following data, which represents their heights  $x$  and arm spans  $y$  (rounded to nearest inch).  
 (60,61), (65,65), (68,67), (72,73), (61,62), (63,63), (70,71), (75,74), (71,72),  
 (62,60), (65,65), (66,68), (62,62), (72,73), (70,70), (69,68), (69,70), (60,61),  
 (63,63), (64,64), (71,71), (68,67), (69,70), (70,72), (65,65), (64,63), (71,70),  
 (67,67)  
 Find a linear model to represent these data and estimate the error.

教務處  
 公佈專用

20013-2

私立臺北醫學院 111 學年度第 一 學期 期中 考試 (試) 命題紙

系 級	科 目	授 課 教 師	考 試 日 期	學 號	姓 名
牙一	微積分	潘力斌	____年____月____日第____節		

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B TABLE OF THE STANDARD NORMAL DISTRIBUTION

Areas under the Standard Normal Curve from  $-\infty$  to  $z$  (see Figure B.1).

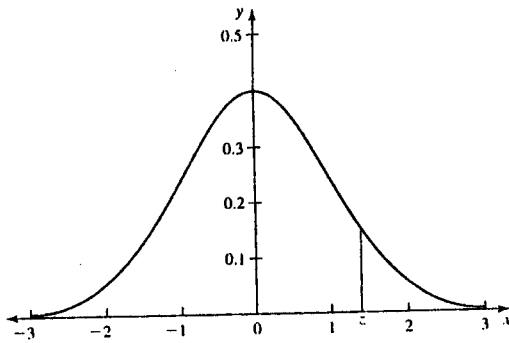


Figure B.1

z	0	1	2	3	4	5	6	7	8	9
0.0	.5000	.5040	.5080	.5120	.5160	.5199	.5239	.5279	.5319	.5359
0.1	.5398	.5438	.5478	.5517	.5557	.5596	.5636	.5675	.5714	.5754
0.2	.5793	.5832	.5871	.5910	.5948	.5987	.6026	.6064	.6103	.6141
0.3	.6179	.6217	.6255	.6293	.6331	.6368	.6406	.6443	.6480	.6517
0.4	.6554	.6591	.6628	.6664	.6700	.6736	.6772	.6808	.6844	.6879
0.5	.6915	.6950	.6985	.7019	.7054	.7088	.7123	.7157	.7190	.7224
0.6	.7258	.7291	.7324	.7357	.7389	.7422	.7454	.7486	.7518	.7549
0.7	.7580	.7612	.7642	.7673	.7704	.7734	.7764	.7794	.7823	.7852
0.8	.7881	.7910	.7939	.7967	.7996	.8023	.8051	.8078	.8106	.8133
0.9	.8159	.8186	.8212	.8238	.8264	.8289	.8315	.8340	.8365	.8389
1.0	.8413	.8438	.8461	.8485	.8508	.8531	.8554	.8577	.8599	.8621
1.1	.8643	.8665	.8686	.8708	.8729	.8749	.8770	.8790	.8810	.8830
1.2	.8849	.8869	.8888	.8907	.8925	.8944	.8962	.8980	.8997	.9015
1.3	.9032	.9049	.9066	.9082	.9099	.9115	.9131	.9147	.9162	.9177
1.4	.9192	.9207	.9222	.9236	.9251	.9265	.9279	.9292	.9306	.9319
1.5	.9332	.9345	.9357	.9370	.9382	.9394	.9406	.9418	.9429	.9441
1.6	.9452	.9463	.9474	.9484	.9495	.9505	.9515	.9525	.9535	.9545
1.7	.9554	.9564	.9573	.9582	.9591	.9599	.9608	.9616	.9625	.9633
1.8	.9641	.9649	.9656	.9664	.9671	.9678	.9686	.9693	.9699	.9706
1.9	.9713	.9719	.9726	.9732	.9738	.9744	.9750	.9756	.9761	.9767
2.0	.9772	.9778	.9783	.9788	.9793	.9798	.9803	.9808	.9812	.9817
2.1	.9821	.9826	.9830	.9834	.9838	.9842	.9846	.9850	.9854	.9857
2.2	.9861	.9864	.9868	.9871	.9875	.9878	.9881	.9884	.9887	.9890
2.3	.9893	.9896	.9898	.9901	.9904	.9906	.9909	.9911	.9913	.9916
2.4	.9918	.9920	.9922	.9925	.9927	.9929	.9931	.9932	.9934	.9936
2.5	.9938	.9940	.9941	.9943	.9945	.9946	.9948	.9949	.9951	.9952
2.6	.9953	.9955	.9956	.9957	.9959	.9960	.9961	.9962	.9963	.9964
2.7	.9965	.9966	.9967	.9968	.9969	.9970	.9971	.9972	.9973	.9974
2.8	.9974	.9975	.9976	.9977	.9977	.9978	.9979	.9979	.9980	.9981
2.9	.9981	.9982	.9982	.9983	.9984	.9984	.9985	.9985	.9986	.9986