

淡江大學 95 學年度進修學士班轉學生招生考試試題

18

系列：國際貿易學系三年級  
統計學系三年級

科目：統計學

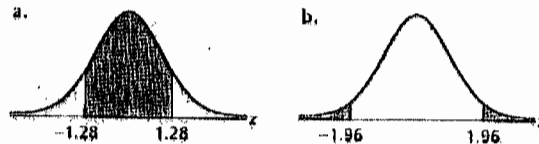
18-1

准帶項目請打「V」	
✓	簡單型計算機

本試題共 2 頁

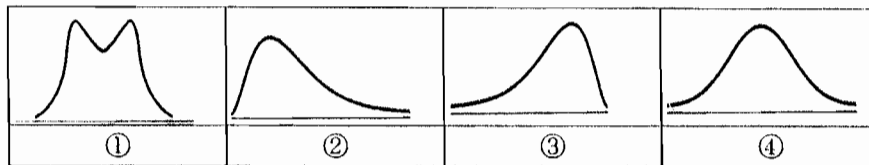
請將答案寫在答案卷上。

- 1 下列兩者皆服從標準常態分配，請使用所提供的統計表格找出下列陰影部分面積(10分)



(a) \_\_\_\_\_ (b) \_\_\_\_\_ (兩尾機率)

- 2 請依據分佈圖判斷資料的型態，並請將適當答案(①、②、③、④)填入下列(a)-(d)問題中。(10分)



(a) \_\_\_\_\_: 鐘型 (Bell shaped)      (b) \_\_\_\_\_: 右偏 (Right skewed)  
(c) \_\_\_\_\_: 雙峰 (Bimodal)      (d) \_\_\_\_\_: 左偏 (Left skewed)

- 3 (a)若  $X \sim N(\mu, \sigma^2)$  且  $Y = \frac{X - \mu}{\sigma}$ , 則  $Var(Y) =$  \_\_\_\_\_ (10分)  
(b)The variable  $X$  is normally distributed. The mean is  $\mu = 22.0$  and the standard deviation is  $\sigma = 2.4$ . Find  $P(19.72 < X < 25.36)$ . (10分)
- 4 調查 10 名新就職的大學畢業生之在校成績班排名 ( $x$ ) 與起薪 ( $y$ ) (月薪, 單位: 千元) 已知:  $\sum X_i = 129$ ,  $\sum Y_i = 317$ ,

$$S_{xy} = \sum x_i y_i - \frac{\sum x_i \sum y_i}{n} = -231.8, S_{xx} = \sum x_i^2 - \frac{(\sum x)^2}{n} = 468.9,$$

$$S_{yy} = \sum y_i^2 - \frac{(\sum y)^2}{n} = 180.6$$

- (a)試求起薪 ( $y$ ) 與在校成績班排名 ( $x$ ) 之相關係數。(10分)  
(b)請問起薪 ( $y$ ) 與在校成績班排名 ( $x$ ) 是正相關還是負相關? 或是無關?  
(10分)
5. 同題 4, 若進行以起薪 ( $y$ ) 為應變數, 在校成績班排名 ( $x$ ) 為解釋變數來

第一頁 (共三頁)

◀ 注意背面尚有試題 ▶

本試題雙面印製

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系別：國際貿易學系三年級  
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18-2

准帶項目請打「V」	
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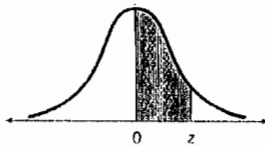
本試題共 2 頁

進行回歸分析，

- (a) 請問代表截距項 ( $\hat{\beta}_0$ ) 及斜率項 ( $\hat{\beta}_1$ ) 的迴歸係數各是多少？(10 分)
- (b) 試求起薪 ( $Y$ ) 對在校成績班排名 ( $X$ ) 之迴歸直線  $\hat{Y}$ 。(10 分)
6. 假設某手術成功的機率為 0.7，請問在 4 位病患接受該項手術下，恰有 3 位手術失敗的機率為何？(10 分)
7. 下列資料為某遊樂場某天玩雲霄飛車的人數：

年齡	6-10	10-15	16-20	21-25
人數	5	15	8	2

請問該樣本平均數為何？(10 分)



z	.00	.01	.02	.03	.04	.05	.06	.07	.08	.09
.0	.0000	.0040	.0080	.0120	.0160	.0199	.0239	.0279	.0319	.0359
.1	.0398	.0438	.0478	.0517	.0557	.0596	.0636	.0675	.0714	.0753
.2	.0793	.0832	.0871	.0910	.0948	.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
.6	.2257	.2291	.2324	.2357	.2389	.2422	.2454	.2486	.2517	.2549
.7	.2580	.2611	.2642	.2673	.2704	.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	.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	.4484	.4495	.4505	.4515	.4525	.4535	.4545
1.7	.4554	.4564	.4573	.4582	.4591	.4599	.4608	.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	.4854	.4857
2.2	.4861	.4864	.4868	.4871	.4875	.4878	.4881	.4884	.4887	.4890
2.3	.4893	.4896	.4898	.4901	.4904	.4906	.4909	.4911	.4913	.4916
2.4	.4918	.4920	.4922	.4925	.4927	.4929	.4931	.4932	.4934	.4936
2.5	.4938	.4940	.4941	.4943	.4945	.4946	.4948	.4949	.4951	.4952
2.6	.4953	.4955	.4956	.4957	.4959	.4960	.4961	.4962	.4963	.4964
2.7	.4965	.4966	.4967	.4968	.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	.4987	.4988	.4988	.4989	.4989	.4989	.4990	.4990

Source: Abridged from Table 1 of A. Hald, *Statistical Tables and Formulas* (New York: John Wiley & Sons, Inc.), 1952. Reproduced by permission of the publisher.