

答案請寫在答案卷上，標明題號，依序作答。

- (1) 因為營運績效頗佳，所以一家公司的老闆決定，明年他將為其公司的員工加薪。加薪的方式如下：(A) 員工按其工作績效加薪，(B) 平均加薪的幅度為 2000 元，(C) 所有員工加薪的變異數為 1000000 元，(D) 整體來看，員工加薪幅度為常態分配。請問：(A) 績效前 10% 的人，最少可以加薪多少元？(B) 績效最後 5% 的人最多可以加薪多少元？(10%)
- (2) 何謂中央極限定律 (central limit theorem) ? (10%)
- (3) 一個金礦有兩個礦坑 (A 坑和 B 坑)。下面資料是 10 位礦工在一小時的時間裡從兩個礦坑中採得之金礦的量 (單位：公克)。

礦工編號	1	2	3	4	5	6	7	8	9	10
A 坑	1.65	1	2.03	1.25	1.05	1.02	1.67	1.86	1.56	1.73
B 坑	1.73	1.06	2.03	1.4	0.95	1.13	1.41	1.73	1.63	1.56

請問：(A) 根據上面的資料分別計算 A 和 B 礦坑之產金量的平均數、變異數、中數。(15%) (B) 請根據上面的資料進行恰當的統計分析；根據分析結果，我們能否說「A 坑的金礦產量比 B 坑多」？(20%)

- (4) 下面是一個混合設計的 ANOVA 摘要表。該設計有一個受試者間變項 (group)；這個變項含有三個 levels，每個 level 有八個受試者。該設計也含有一個受試者內變項 (interval)；這變項含有六個 levels。請根據題幹與摘要表提供的訊息，進行 4.1 到 4.15 的填空。(45%)

摘要表

變異來源	df	SS	MS	F
Between Subj	(4.1__)	(4.5__)		
Group	2	285815	(4.8__)	(4.13__)
Subject(w/in groups)	(4.2__)	(4.6__)	(4.9__)	
Within Subject	(4.3__)	761755.8		
Interval	5	(4.7__)	(4.10__)	(4.14__)
Interval X Group	(4.4__)	80820	(4.11__)	(4.15__)
Interval X Subject(within groups)	105	281199.3	(4.12__)	
Total	143	1432292.9		

題號：25

國立臺灣大學九十五學年度轉學生入學考試試題

科目：心理及教育統計學

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Normal Curve Areas

z	.00	.01	.02	.03	.04	.05	.06	.07	.08	.09
0.0	.0000	.0040	.0080	.0120	.0160	.0199	.0239	.0279	.0319	.0359
0.1	.0398	.0438	.0478	.0517	.0557	.0596	.0636	.0675	.0714	.0753
0.2	.0793	.0832	.0871	.0910	.0948	.0987	.1026	.1064	.1103	.1141
0.3	.1179	.1217	.1255	.1293	.1331	.1368	.1406	.1443	.1480	.1517
0.4	.1554	.1591	.1628	.1664	.1700	.1736	.1772	.1808	.1844	.1879
0.5	.1915	.1950	.1985	.2019	.2054	.2088	.2123	.2157	.2190	.2224
0.6	.2257	.2291	.2324	.2357	.2389	.2422	.2454	.2486	.2517	.2549
0.7	.2580	.2611	.2642	.2673	.2704	.2734	.2764	.2794	.2823	.2852
0.8	.2881	.2910	.2939	.2967	.2995	.3023	.3051	.3078	.3106	.3133
0.9	.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

Critical Values for Student's *t*

v	$t_{100}$	$t_{050}$	$t_{025}$	$t_{010}$	$t_{005}$	$t_{001}$	$t_{0005}$
1	3.078	6.314	12.706	31.821	63.657	318.310	636.620
2	1.886	2.920	4.303	6.965	9.925	22.326	31.598
3	1.638	2.353	3.182	4.541	5.841	10.213	12.924
4	1.533	2.132	2.776	3.747	4.604	7.173	8.610
5	1.476	2.015	2.571	3.365	4.032	5.893	6.869
6	1.440	1.943	2.447	3.143	3.707	5.208	5.959
7	1.415	1.895	2.365	2.998	3.499	4.785	5.408
8	1.397	1.860	2.306	2.896	3.355	4.501	5.041
9	1.383	1.833	2.262	2.821	3.250	4.297	4.781
10	1.372	1.812	2.228	2.764	3.169	4.144	4.587
11	1.363	1.796	2.201	2.718	3.106	4.025	4.437
12	1.356	1.782	2.179	2.681	3.055	3.930	4.318
13	1.350	1.771	2.160	2.650	3.102	3.852	4.221
14	1.345	1.760	2.145	2.624	2.977	3.787	4.140
15	1.341	1.753	2.131	2.602	2.947	3.733	4.073
16	1.337	1.746	2.120	2.583	2.921	3.686	4.015
17	1.333	1.740	2.110	2.567	2.898	3.646	3.965
18	1.330	1.734	2.101	2.552	2.878	3.610	3.922
19	1.328	1.729	2.093	2.539	2.861	3.579	3.883
20	1.325	1.725	2.086	2.528	2.845	3.552	3.850

試題必須隨卷繳回