

# ◆ 성취평가제 성적 반영

## 1. 성취평가제 학교생활기록부 기재방식(예시)

과목	단위수	원점수/과목평균 [표준편차]	석차등급 [수강자수]	과목	단위수	원점수/과목평균 [표준편차]	석차등급 [수강자수]
상업 경제	3	92/51.2(21.8)	1(374)	상업 경제	3	92/51.2(21.8)	A(374)

'석차등급' 란의 'ABCDE' 는 성취도를 나타냄  
2014학년도부터 "석차등급" 을 '성취도' 로 용어 수정

### ▣ 참고자료: <학업성적 처리>

과목별 성적일람표는 매 학기말 교과 담당교사가 작성하되, 지필평가(명칭, 반영 비율 등 명기)와 수행평가(영역, 반영 비율 등 명기)의 점수를 합산하고, 원점수, 과목평균, 과목표준편차, 석차(동석차수)/수강자수, 석차등급을 산출한다. 다만, **성취평가제가 적용되는 특성화고(마이스터고 포함) 1·2학년의 경우 전문교과 중 농생명 산업 교과, 공업 교과, 상업정보 교과, 수산·해운 교과, 가사·실업 교과는 석차(동석차수)/수강자수, 석차등급을 산출하지 않는 대신 성취도(수강자수)를 산출하며, 체육·음악·미술교과의 과목은 성취도만을 산출한다.**

자료: 부산교육청 - 행정마당 - 교수·학습기획과 - 공개자료실(2013학년도 고등학교 학업성적관리시행지침)

## 2. 성적 산출 공식(안)

과목	단위수	원점수/과목평균 [표준편차]	석차등급 [수강자수]	과목	단위수	원점수/과목평균 [표준편차]	석차등급 [수강자수]
상업 경제	3	92/51.2(21.8)	1(374)	상업 경제	3	92/51.2(21.8)	A(374)

$$Z = \frac{X - m}{\sigma}$$

X = 원점수  
[본인이 받은 시험 점수]  
m = 평균 점수  
σ = 표준편차

Z 점수를 구한 다음 →  
정규분포표에서 비교

이렇게 해서 Z 점수를 구한 다음, 그것을 정규분포표에서 비교해 봅니다.

정규분포표란 다음 그래프  $\Phi(z) = \int_{-\infty}^z \frac{1}{\sqrt{2\pi}} e^{-\frac{1}{2}x^2} dx$  또는  $f(x) = \frac{1}{\sqrt{2\pi}\sigma} e^{-\frac{(x-m)^2}{2\sigma^2}}$

### <예문>

- 상업경제 과목 점수(92점), 과목 평균(51.2), 표준편차(21.8), 전체 학생수(374명)
- Z=1.87고, 해당하는 확률을 정규분포표에서 찾으면, 대략 0.9693가 된다.
- 이것은 전체 374명 학생 중에 백분율로 약 96.93%이고, 백분위로 따지면 상위 3.07% 된다.
- 백분위 3.07%을 등급산출표에 의하면 1등급에 해당된다
- 여기에서 등수는  $374 \cdot 0.0307 = 11.48$ 등이 나오는데, 상업경제 석차는 11 또는 12등이라고 추정할 수 있습니다.
- 이것은 시험을 한번 봤을 때 위 결과가 나오는 것이므로 항상 확실하다고는 할 수 없습니다.  
(확률적으로 근사치의 값을 구하기 위함)

### 3. Z점수 석차백분율, 석차등급 조건표

Z점수	정규분포 확률값	백분위	석차 백분율	석차 등급	Z점수	정규분포 확률값	백분위	석차 백분율	석차 등급
3.00	0.9987	0.0013	0.13	1	2.50	0.9938	0.0062	0.62	1
2.99	0.9986	0.0014	0.14	1	2.49	0.9936	0.0064	0.64	1
2.98	0.9986	0.0014	0.14	1	2.48	0.9934	0.0066	0.66	1
2.97	0.9985	0.0015	0.15	1	2.47	0.9932	0.0068	0.68	1
2.96	0.9985	0.0015	0.15	1	2.46	0.9931	0.0069	0.69	1
2.95	0.9984	0.0016	0.16	1	2.45	0.9929	0.0071	0.71	1
2.94	0.9984	0.0016	0.16	1	2.44	0.9927	0.0073	0.73	1
2.93	0.9983	0.0017	0.17	1	2.43	0.9925	0.0075	0.75	1
2.92	0.9982	0.0018	0.18	1	2.42	0.9922	0.0078	0.78	1
2.91	0.9982	0.0018	0.18	1	2.41	0.9920	0.0080	0.80	1
2.90	0.9981	0.0019	0.19	1	2.40	0.9918	0.0082	0.82	1
2.89	0.9981	0.0019	0.19	1	2.39	0.9916	0.0084	0.84	1
2.88	0.9980	0.0020	0.20	1	2.38	0.9913	0.0087	0.87	1
2.87	0.9979	0.0021	0.21	1	2.37	0.9911	0.0089	0.89	1
2.86	0.9979	0.0021	0.21	1	2.36	0.9909	0.0091	0.91	1
2.85	0.9978	0.0022	0.22	1	2.35	0.9906	0.0094	0.94	1
2.84	0.9977	0.0023	0.23	1	2.34	0.9904	0.0096	0.96	1
2.83	0.9977	0.0023	0.23	1	2.33	0.9901	0.0099	0.99	1
2.82	0.9976	0.0024	0.24	1	2.32	0.9898	0.0102	1.02	1
2.81	0.9975	0.0025	0.25	1	2.31	0.9896	0.0104	1.04	1
2.80	0.9974	0.0026	0.26	1	2.30	0.9893	0.0107	1.07	1
2.79	0.9974	0.0026	0.26	1	2.29	0.9890	0.0110	1.10	1
2.78	0.9973	0.0027	0.27	1	2.28	0.9887	0.0113	1.13	1
2.77	0.9972	0.0028	0.28	1	2.27	0.9884	0.0116	1.16	1
2.76	0.9971	0.0029	0.29	1	2.26	0.9881	0.0119	1.19	1
2.75	0.9970	0.0030	0.30	1	2.25	0.9878	0.0122	1.22	1
2.74	0.9969	0.0031	0.31	1	2.24	0.9875	0.0125	1.25	1
2.73	0.9968	0.0032	0.32	1	2.23	0.9871	0.0129	1.29	1
2.72	0.9967	0.0033	0.33	1	2.22	0.9868	0.0132	1.32	1
2.71	0.9966	0.0034	0.34	1	2.21	0.9864	0.0136	1.36	1
2.70	0.9965	0.0035	0.35	1	2.20	0.9861	0.0139	1.39	1
2.69	0.9964	0.0036	0.36	1	2.19	0.9857	0.0143	1.43	1
2.68	0.9963	0.0037	0.37	1	2.18	0.9854	0.0146	1.46	1
2.67	0.9962	0.0038	0.38	1	2.17	0.9850	0.0150	1.50	1
2.66	0.9961	0.0039	0.39	1	2.16	0.9846	0.0154	1.54	1
2.65	0.9960	0.0040	0.40	1	2.15	0.9842	0.0158	1.58	1
2.64	0.9959	0.0041	0.41	1	2.14	0.9838	0.0162	1.62	1
2.63	0.9957	0.0043	0.43	1	2.13	0.9834	0.0166	1.66	1
2.62	0.9956	0.0044	0.44	1	2.12	0.9830	0.0170	1.70	1
2.61	0.9955	0.0045	0.45	1	2.11	0.9826	0.0174	1.74	1
2.60	0.9953	0.0047	0.47	1	2.10	0.9821	0.0179	1.79	1
2.59	0.9952	0.0048	0.48	1	2.09	0.9817	0.0183	1.83	1
2.58	0.9951	0.0049	0.49	1	2.08	0.9812	0.0188	1.88	1
2.57	0.9949	0.0051	0.51	1	2.07	0.9808	0.0192	1.92	1
2.56	0.9948	0.0052	0.52	1	2.06	0.9803	0.0197	1.97	1
2.55	0.9946	0.0054	0.54	1	2.05	0.9798	0.0202	2.02	1
2.54	0.9945	0.0055	0.55	1	2.04	0.9793	0.0207	2.07	1
2.53	0.9943	0.0057	0.57	1	2.03	0.9788	0.0212	2.12	1
2.52	0.9941	0.0059	0.59	1	2.02	0.9783	0.0217	2.17	1
2.51	0.9940	0.0060	0.60	1	2.01	0.9778	0.0222	2.22	1

Z점수	정규분포 확률값	백분위	석차 백분율	석차 등급	Z점수	정규분포 확률값	백분위	석차 백분율	석차 등급
2.00	0.9772	0.0228	2.28	1	1.50	0.9332	0.0668	6.68	2
1.99	0.9767	0.0233	2.33	1	1.49	0.9319	0.0681	6.81	2
1.98	0.9761	0.0239	2.39	1	1.48	0.9306	0.0694	6.94	2
1.97	0.9756	0.0244	2.44	1	1.47	0.9292	0.0708	7.08	2
1.96	0.9750	0.0250	2.50	1	1.46	0.9279	0.0721	7.21	2
1.95	0.9744	0.0256	2.56	1	1.45	0.9265	0.0735	7.35	2
1.94	0.9738	0.0262	2.62	1	1.44	0.9251	0.0749	7.49	2
1.93	0.9732	0.0268	2.68	1	1.43	0.9236	0.0764	7.64	2
1.92	0.9726	0.0274	2.74	1	1.42	0.9222	0.0778	7.78	2
1.91	0.9719	0.0281	2.81	1	1.41	0.9207	0.0793	7.93	2
1.90	0.9713	0.0287	2.87	1	1.40	0.9192	0.0808	8.08	2
1.89	0.9706	0.0294	2.94	1	1.39	0.9177	0.0823	8.23	2
1.88	0.9699	0.0301	3.01	1	1.38	0.9162	0.0838	8.38	2
1.87	0.9693	0.0307	3.07	1	1.37	0.9147	0.0853	8.53	2
1.86	0.9686	0.0314	3.14	1	1.36	0.9131	0.0869	8.69	2
1.85	0.9678	0.0322	3.22	1	1.35	0.9115	0.0885	8.85	2
1.84	0.9671	0.0329	3.29	1	1.34	0.9099	0.0901	9.01	2
1.83	0.9664	0.0336	3.36	1	1.33	0.9082	0.0918	9.18	2
1.82	0.9656	0.0344	3.44	1	1.32	0.9066	0.0934	9.34	2
1.81	0.9649	0.0351	3.51	1	1.31	0.9049	0.0951	9.51	2
1.80	0.9641	0.0359	3.59	1	1.30	0.9032	0.0968	9.68	2
1.79	0.9633	0.0367	3.67	1	1.29	0.9015	0.0985	9.85	2
1.78	0.9625	0.0375	3.75	1	1.28	0.8997	0.1003	10.03	2
1.77	0.9616	0.0384	3.84	1	1.27	0.8980	0.1020	10.20	2
1.76	0.9608	0.0392	3.92	1	1.26	0.8962	0.1038	10.38	2
1.75	0.9599	0.0401	4.01	2	1.25	0.8944	0.1056	10.56	2
1.74	0.9591	0.0409	4.09	2	1.24	0.8925	0.1075	10.75	2
1.73	0.9582	0.0418	4.18	2	1.23	0.8907	0.1093	10.93	2
1.72	0.9573	0.0427	4.27	2	1.22	0.8888	0.1112	11.12	3
1.71	0.9564	0.0436	4.36	2	1.21	0.8869	0.1131	11.31	3
1.70	0.9554	0.0446	4.46	2	1.20	0.8849	0.1151	11.51	3
1.69	0.9545	0.0455	4.55	2	1.19	0.8830	0.1170	11.70	3
1.68	0.9535	0.0465	4.65	2	1.18	0.8810	0.1190	11.90	3
1.67	0.9525	0.0475	4.75	2	1.17	0.8790	0.1210	12.10	3
1.66	0.9515	0.0485	4.85	2	1.16	0.8770	0.1230	12.30	3
1.65	0.9505	0.0495	4.95	2	1.15	0.8749	0.1251	12.51	3
1.64	0.9495	0.0505	5.05	2	1.14	0.8729	0.1271	12.71	3
1.63	0.9484	0.0516	5.16	2	1.13	0.8708	0.1292	12.92	3
1.62	0.9474	0.0526	5.26	2	1.12	0.8686	0.1314	13.14	3
1.61	0.9463	0.0537	5.37	2	1.11	0.8665	0.1335	13.35	3
1.60	0.9452	0.0548	5.48	2	1.10	0.8643	0.1357	13.57	3
1.59	0.9441	0.0559	5.59	2	1.09	0.8621	0.1379	13.79	3
1.58	0.9429	0.0571	5.71	2	1.08	0.8599	0.1401	14.01	3
1.57	0.9418	0.0582	5.82	2	1.07	0.8577	0.1423	14.23	3
1.56	0.9406	0.0594	5.94	2	1.06	0.8554	0.1446	14.46	3
1.55	0.9394	0.0606	6.06	2	1.05	0.8531	0.1469	14.69	3
1.54	0.9382	0.0618	6.18	2	1.04	0.8508	0.1492	14.92	3
1.53	0.9370	0.0630	6.30	2	1.03	0.8485	0.1515	15.15	3
1.52	0.9357	0.0643	6.43	2	1.02	0.8461	0.1539	15.39	3
1.51	0.9345	0.0655	6.55	2	1.01	0.8438	0.1562	15.62	3

Z점수	정규분포 확률값	백분위	석차 백분율	석차 등급	Z점수	정규분포 확률값	백분위	석차 백분율	석차 등급
1.00	0.8413	0.1587	15.87	3	0.50	0.6915	0.3085	30.85	4
0.99	0.8389	0.1611	16.11	3	0.49	0.6879	0.3121	31.21	4
0.98	0.8365	0.1635	16.35	3	0.48	0.6844	0.3156	31.56	4
0.97	0.8340	0.1660	16.60	3	0.47	0.6808	0.3192	31.92	4
0.96	0.8315	0.1685	16.85	3	0.46	0.6772	0.3228	32.28	4
0.95	0.8289	0.1711	17.11	3	0.45	0.6736	0.3264	32.64	4
0.94	0.8264	0.1736	17.36	3	0.44	0.6700	0.3300	33.00	4
0.93	0.8238	0.1762	17.62	3	0.43	0.6664	0.3336	33.36	4
0.92	0.8212	0.1788	17.88	3	0.42	0.6628	0.3372	33.72	4
0.91	0.8186	0.1814	18.14	3	0.41	0.6591	0.3409	34.09	4
0.90	0.8159	0.1841	18.41	3	0.40	0.6554	0.3446	34.46	4
0.89	0.8133	0.1867	18.67	3	0.39	0.6517	0.3483	34.83	4
0.88	0.8106	0.1894	18.94	3	0.38	0.6480	0.3520	35.20	4
0.87	0.8078	0.1922	19.22	3	0.37	0.6443	0.3557	35.57	4
0.86	0.8051	0.1949	19.49	3	0.36	0.6406	0.3594	35.94	4
0.85	0.8023	0.1977	19.77	3	0.35	0.6368	0.3632	36.32	4
0.84	0.7995	0.2005	20.05	3	0.34	0.6331	0.3669	36.69	4
0.83	0.7967	0.2033	20.33	3	0.33	0.6293	0.3707	37.07	4
0.82	0.7939	0.2061	20.61	3	0.32	0.6255	0.3745	37.45	4
0.81	0.7910	0.2090	20.90	3	0.31	0.6217	0.3783	37.83	4
0.80	0.7881	0.2119	21.19	3	0.30	0.6179	0.3821	38.21	4
0.79	0.7852	0.2148	21.48	3	0.29	0.6141	0.3859	38.59	4
0.78	0.7823	0.2177	21.77	3	0.28	0.6103	0.3897	38.97	4
0.77	0.7794	0.2206	22.06	3	0.27	0.6064	0.3936	39.36	4
0.76	0.7764	0.2236	22.36	3	0.26	0.6026	0.3974	39.74	4
0.75	0.7734	0.2266	22.66	3	0.25	0.5987	0.4013	40.13	5
0.74	0.7704	0.2296	22.96	3	0.24	0.5948	0.4052	40.52	5
0.73	0.7673	0.2327	23.27	4	0.23	0.5910	0.4090	40.90	5
0.72	0.7642	0.2358	23.58	4	0.22	0.5871	0.4129	41.29	5
0.71	0.7611	0.2389	23.89	4	0.21	0.5832	0.4168	41.68	5
0.70	0.7580	0.2420	24.20	4	0.20	0.5793	0.4207	42.07	5
0.69	0.7549	0.2451	24.51	4	0.19	0.5753	0.4247	42.47	5
0.68	0.7517	0.2483	24.83	4	0.18	0.5714	0.4286	42.86	5
0.67	0.7486	0.2514	25.14	4	0.17	0.5675	0.4325	43.25	5
0.66	0.7454	0.2546	25.46	4	0.16	0.5636	0.4364	43.64	5
0.65	0.7422	0.2578	25.78	4	0.15	0.5596	0.4404	44.04	5
0.64	0.7389	0.2611	26.11	4	0.14	0.5557	0.4443	44.43	5
0.63	0.7357	0.2643	26.43	4	0.13	0.5517	0.4483	44.83	5
0.62	0.7324	0.2676	26.76	4	0.12	0.5478	0.4522	45.22	5
0.61	0.7291	0.2709	27.09	4	0.11	0.5438	0.4562	45.62	5
0.60	0.7257	0.2743	27.43	4	0.10	0.5398	0.4602	46.02	5
0.59	0.7224	0.2776	27.76	4	0.09	0.5359	0.4641	46.41	5
0.58	0.7190	0.2810	28.10	4	0.08	0.5319	0.4681	46.81	5
0.57	0.7157	0.2843	28.43	4	0.07	0.5279	0.4721	47.21	5
0.56	0.7123	0.2877	28.77	4	0.06	0.5239	0.4761	47.61	5
0.55	0.7088	0.2912	29.12	4	0.05	0.5199	0.4801	48.01	5
0.54	0.7054	0.2946	29.46	4	0.04	0.5160	0.4840	48.40	5
0.53	0.7019	0.2981	29.81	4	0.03	0.5120	0.4880	48.80	5
0.52	0.6985	0.3015	30.15	4	0.02	0.5080	0.4920	49.20	5
0.51	0.6950	0.3050	30.50	4	0.01	0.5040	0.4960	49.60	5

Z점수	정규분포 확률값	백분위	석차 백분율	석차 등급	Z점수	정규분포 확률값	백분위	석차 백분율	석차 등급
0.00	0.5000	0.5000	50.00	5	-0.50	0.3085	0.6915	69.15	6
-0.01	0.4960	0.5040	50.40	5	-0.51	0.3050	0.6950	69.50	6
-0.02	0.4920	0.5080	50.80	5	-0.52	0.3015	0.6985	69.85	6
-0.03	0.4880	0.5120	51.20	5	-0.53	0.2981	0.7019	70.19	6
-0.04	0.4840	0.5160	51.60	5	-0.54	0.2946	0.7054	70.54	6
-0.05	0.4801	0.5199	51.99	5	-0.55	0.2912	0.7088	70.88	6
-0.06	0.4761	0.5239	52.39	5	-0.56	0.2877	0.7123	71.23	6
-0.07	0.4721	0.5279	52.79	5	-0.57	0.2843	0.7157	71.57	6
-0.08	0.4681	0.5319	53.19	5	-0.58	0.2810	0.7190	71.90	6
-0.09	0.4641	0.5359	53.59	5	-0.59	0.2776	0.7224	72.24	6
-0.10	0.4602	0.5398	53.98	5	-0.60	0.2743	0.7257	72.57	6
-0.11	0.4562	0.5438	54.38	5	-0.61	0.2709	0.7291	72.91	6
-0.12	0.4522	0.5478	54.78	5	-0.62	0.2676	0.7324	73.24	6
-0.13	0.4483	0.5517	55.17	5	-0.63	0.2643	0.7357	73.57	6
-0.14	0.4443	0.5557	55.57	5	-0.64	0.2611	0.7389	73.89	6
-0.15	0.4404	0.5596	55.96	5	-0.65	0.2578	0.7422	74.22	6
-0.16	0.4364	0.5636	56.36	5	-0.66	0.2546	0.7454	74.54	6
-0.17	0.4325	0.5675	56.75	5	-0.67	0.2514	0.7486	74.86	6
-0.18	0.4286	0.5714	57.14	5	-0.68	0.2483	0.7517	75.17	6
-0.19	0.4247	0.5753	57.53	5	-0.69	0.2451	0.7549	75.49	6
-0.20	0.4207	0.5793	57.93	5	-0.70	0.2420	0.7580	75.80	6
-0.21	0.4168	0.5832	58.32	5	-0.71	0.2389	0.7611	76.11	6
-0.22	0.4129	0.5871	58.71	5	-0.72	0.2358	0.7642	76.42	6
-0.23	0.4090	0.5910	59.10	5	-0.73	0.2327	0.7673	76.73	6
-0.24	0.4052	0.5948	59.48	5	-0.74	0.2296	0.7704	77.04	7
-0.25	0.4013	0.5987	59.87	5	-0.75	0.2266	0.7734	77.34	7
-0.26	0.3974	0.6026	60.26	6	-0.76	0.2236	0.7764	77.64	7
-0.27	0.3936	0.6064	60.64	6	-0.77	0.2206	0.7794	77.94	7
-0.28	0.3897	0.6103	61.03	6	-0.78	0.2177	0.7823	78.23	7
-0.29	0.3859	0.6141	61.41	6	-0.79	0.2148	0.7852	78.52	7
-0.30	0.3821	0.6179	61.79	6	-0.80	0.2119	0.7881	78.81	7
-0.31	0.3783	0.6217	62.17	6	-0.81	0.2090	0.7910	79.10	7
-0.32	0.3745	0.6255	62.55	6	-0.82	0.2061	0.7939	79.39	7
-0.33	0.3707	0.6293	62.93	6	-0.83	0.2033	0.7967	79.67	7
-0.34	0.3669	0.6331	63.31	6	-0.84	0.2005	0.7995	79.95	7
-0.35	0.3632	0.6368	63.68	6	-0.85	0.1977	0.8023	80.23	7
-0.36	0.3594	0.6406	64.06	6	-0.86	0.1949	0.8051	80.51	7
-0.37	0.3557	0.6443	64.43	6	-0.87	0.1922	0.8078	80.78	7
-0.38	0.3520	0.6480	64.80	6	-0.88	0.1894	0.8106	81.06	7
-0.39	0.3483	0.6517	65.17	6	-0.89	0.1867	0.8133	81.33	7
-0.40	0.3446	0.6554	65.54	6	-0.90	0.1841	0.8159	81.59	7
-0.41	0.3409	0.6591	65.91	6	-0.91	0.1814	0.8186	81.86	7
-0.42	0.3372	0.6628	66.28	6	-0.92	0.1788	0.8212	82.12	7
-0.43	0.3336	0.6664	66.64	6	-0.93	0.1762	0.8238	82.38	7
-0.44	0.3300	0.6700	67.00	6	-0.94	0.1736	0.8264	82.64	7
-0.45	0.3264	0.6736	67.36	6	-0.95	0.1711	0.8289	82.89	7
-0.46	0.3228	0.6772	67.72	6	-0.96	0.1685	0.8315	83.15	7
-0.47	0.3192	0.6808	68.08	6	-0.97	0.1660	0.8340	83.40	7
-0.48	0.3156	0.6844	68.44	6	-0.98	0.1635	0.8365	83.65	7
-0.49	0.3121	0.6879	68.79	6	-0.99	0.1611	0.8389	83.89	7

Z점수	정규분포 확률값	백분위	석차 백분율	석차 등급	Z점수	정규분포 확률값	백분위	석차 백분율	석차 등급
-1.00	0.1587	0.8413	84.13	7	-1.50	0.0668	0.9332	93.32	8
-1.01	0.1562	0.8438	84.38	7	-1.51	0.0655	0.9345	93.45	8
-1.02	0.1539	0.8461	84.61	7	-1.52	0.0643	0.9357	93.57	8
-1.03	0.1515	0.8485	84.85	7	-1.53	0.0630	0.9370	93.70	8
-1.04	0.1492	0.8508	85.08	7	-1.54	0.0618	0.9382	93.82	8
-1.05	0.1469	0.8531	85.31	7	-1.55	0.0606	0.9394	93.94	8
-1.06	0.1446	0.8554	85.54	7	-1.56	0.0594	0.9406	94.06	8
-1.07	0.1423	0.8577	85.77	7	-1.57	0.0582	0.9418	94.18	8
-1.08	0.1401	0.8599	85.99	7	-1.58	0.0571	0.9429	94.29	8
-1.09	0.1379	0.8621	86.21	7	-1.59	0.0559	0.9441	94.41	8
-1.10	0.1357	0.8643	86.43	7	-1.60	0.0548	0.9452	94.52	8
-1.11	0.1335	0.8665	86.65	7	-1.61	0.0537	0.9463	94.63	8
-1.12	0.1314	0.8686	86.86	7	-1.62	0.0526	0.9474	94.74	8
-1.13	0.1292	0.8708	87.08	7	-1.63	0.0516	0.9484	94.84	8
-1.14	0.1271	0.8729	87.29	7	-1.64	0.0505	0.9495	94.95	8
-1.15	0.1251	0.8749	87.49	7	-1.65	0.0495	0.9505	95.05	8
-1.16	0.1230	0.8770	87.70	7	-1.66	0.0485	0.9515	95.15	8
-1.17	0.1210	0.8790	87.90	7	-1.67	0.0475	0.9525	95.25	8
-1.18	0.1190	0.8810	88.10	7	-1.68	0.0465	0.9535	95.35	8
-1.19	0.1170	0.8830	88.30	7	-1.69	0.0455	0.9545	95.45	8
-1.20	0.1151	0.8849	88.49	7	-1.70	0.0446	0.9554	95.54	8
-1.21	0.1131	0.8869	88.69	7	-1.71	0.0436	0.9564	95.64	8
-1.22	0.1112	0.8888	88.88	7	-1.72	0.0427	0.9573	95.73	8
-1.23	0.1093	0.8907	89.07	8	-1.73	0.0418	0.9582	95.82	8
-1.24	0.1075	0.8925	89.25	8	-1.74	0.0409	0.9591	95.91	8
-1.25	0.1056	0.8944	89.44	8	-1.75	0.0401	0.9599	95.99	8
-1.26	0.1038	0.8962	89.62	8	-1.76	0.0392	0.9608	96.08	9
-1.27	0.1020	0.8980	89.80	8	-1.77	0.0384	0.9616	96.16	9
-1.28	0.1003	0.8997	89.97	8	-1.78	0.0375	0.9625	96.25	9
-1.29	0.0985	0.9015	90.15	8	-1.79	0.0367	0.9633	96.33	9
-1.30	0.0968	0.9032	90.32	8	-1.80	0.0359	0.9641	96.41	9
-1.31	0.0951	0.9049	90.49	8	-1.81	0.0351	0.9649	96.49	9
-1.32	0.0934	0.9066	90.66	8	-1.82	0.0344	0.9656	96.56	9
-1.33	0.0918	0.9082	90.82	8	-1.83	0.0336	0.9664	96.64	9
-1.34	0.0901	0.9099	90.99	8	-1.84	0.0329	0.9671	96.71	9
-1.35	0.0885	0.9115	91.15	8	-1.85	0.0322	0.9678	96.78	9
-1.36	0.0869	0.9131	91.31	8	-1.86	0.0314	0.9686	96.86	9
-1.37	0.0853	0.9147	91.47	8	-1.87	0.0307	0.9693	96.93	9
-1.38	0.0838	0.9162	91.62	8	-1.88	0.0301	0.9699	96.99	9
-1.39	0.0823	0.9177	91.77	8	-1.89	0.0294	0.9706	97.06	9
-1.40	0.0808	0.9192	91.92	8	-1.90	0.0287	0.9713	97.13	9
-1.41	0.0793	0.9207	92.07	8	-1.91	0.0281	0.9719	97.19	9
-1.42	0.0778	0.9222	92.22	8	-1.92	0.0274	0.9726	97.26	9
-1.43	0.0764	0.9236	92.36	8	-1.93	0.0268	0.9732	97.32	9
-1.44	0.0749	0.9251	92.51	8	-1.94	0.0262	0.9738	97.38	9
-1.45	0.0735	0.9265	92.65	8	-1.95	0.0256	0.9744	97.44	9
-1.46	0.0721	0.9279	92.79	8	-1.96	0.0250	0.9750	97.50	9
-1.47	0.0708	0.9292	92.92	8	-1.97	0.0244	0.9756	97.56	9
-1.48	0.0694	0.9306	93.06	8	-1.98	0.0239	0.9761	97.61	9
-1.49	0.0681	0.9319	93.19	8	-1.99	0.0233	0.9767	97.67	9

Z점수	정규분포 확률값	백분위	석차 백분율	석차 등급	Z점수	정규분포 확률값	백분위	석차 백분율	석차 등급
-2.00	0.0228	0.9772	97.72	9	-2.50	0.0062	0.9938	99.38	9
-2.01	0.0222	0.9778	97.78	9	-2.51	0.0060	0.9940	99.40	9
-2.02	0.0217	0.9783	97.83	9	-2.52	0.0059	0.9941	99.41	9
-2.03	0.0212	0.9788	97.88	9	-2.53	0.0057	0.9943	99.43	9
-2.04	0.0207	0.9793	97.93	9	-2.54	0.0055	0.9945	99.45	9
-2.05	0.0202	0.9798	97.98	9	-2.55	0.0054	0.9946	99.46	9
-2.06	0.0197	0.9803	98.03	9	-2.56	0.0052	0.9948	99.48	9
-2.07	0.0192	0.9808	98.08	9	-2.57	0.0051	0.9949	99.49	9
-2.08	0.0188	0.9812	98.12	9	-2.58	0.0049	0.9951	99.51	9
-2.09	0.0183	0.9817	98.17	9	-2.59	0.0048	0.9952	99.52	9
-2.10	0.0179	0.9821	98.21	9	-2.60	0.0047	0.9953	99.53	9
-2.11	0.0174	0.9826	98.26	9	-2.61	0.0045	0.9955	99.55	9
-2.12	0.0170	0.9830	98.30	9	-2.62	0.0044	0.9956	99.56	9
-2.13	0.0166	0.9834	98.34	9	-2.63	0.0043	0.9957	99.57	9
-2.14	0.0162	0.9838	98.38	9	-2.64	0.0041	0.9959	99.59	9
-2.15	0.0158	0.9842	98.42	9	-2.65	0.0040	0.9960	99.60	9
-2.16	0.0154	0.9846	98.46	9	-2.66	0.0039	0.9961	99.61	9
-2.17	0.0150	0.9850	98.50	9	-2.67	0.0038	0.9962	99.62	9
-2.18	0.0146	0.9854	98.54	9	-2.68	0.0037	0.9963	99.63	9
-2.19	0.0143	0.9857	98.57	9	-2.69	0.0036	0.9964	99.64	9
-2.20	0.0139	0.9861	98.61	9	-2.70	0.0035	0.9965	99.65	9
-2.21	0.0136	0.9864	98.64	9	-2.71	0.0034	0.9966	99.66	9
-2.22	0.0132	0.9868	98.68	9	-2.72	0.0033	0.9967	99.67	9
-2.23	0.0129	0.9871	98.71	9	-2.73	0.0032	0.9968	99.68	9
-2.24	0.0125	0.9875	98.75	9	-2.74	0.0031	0.9969	99.69	9
-2.25	0.0122	0.9878	98.78	9	-2.75	0.0030	0.9970	99.70	9
-2.26	0.0119	0.9881	98.81	9	-2.76	0.0029	0.9971	99.71	9
-2.27	0.0116	0.9884	98.84	9	-2.77	0.0028	0.9972	99.72	9
-2.28	0.0113	0.9887	98.87	9	-2.78	0.0027	0.9973	99.73	9
-2.29	0.0110	0.9890	98.90	9	-2.79	0.0026	0.9974	99.74	9
-2.30	0.0107	0.9893	98.93	9	-2.80	0.0026	0.9974	99.74	9
-2.31	0.0104	0.9896	98.96	9	-2.81	0.0025	0.9975	99.75	9
-2.32	0.0102	0.9898	98.98	9	-2.82	0.0024	0.9976	99.76	9
-2.33	0.0099	0.9901	99.01	9	-2.83	0.0023	0.9977	99.77	9
-2.34	0.0096	0.9904	99.04	9	-2.84	0.0023	0.9977	99.77	9
-2.35	0.0094	0.9906	99.06	9	-2.85	0.0022	0.9978	99.78	9
-2.36	0.0091	0.9909	99.09	9	-2.86	0.0021	0.9979	99.79	9
-2.37	0.0089	0.9911	99.11	9	-2.87	0.0021	0.9979	99.79	9
-2.38	0.0087	0.9913	99.13	9	-2.88	0.0020	0.9980	99.80	9
-2.39	0.0084	0.9916	99.16	9	-2.89	0.0019	0.9981	99.81	9
-2.40	0.0082	0.9918	99.18	9	-2.90	0.0019	0.9981	99.81	9
-2.41	0.0080	0.9920	99.20	9	-2.91	0.0018	0.9982	99.82	9
-2.42	0.0078	0.9922	99.22	9	-2.92	0.0018	0.9982	99.82	9
-2.43	0.0075	0.9925	99.25	9	-2.93	0.0017	0.9983	99.83	9
-2.44	0.0073	0.9927	99.27	9	-2.94	0.0016	0.9984	99.84	9
-2.45	0.0071	0.9929	99.29	9	-2.95	0.0016	0.9984	99.84	9
-2.46	0.0069	0.9931	99.31	9	-2.96	0.0015	0.9985	99.85	9
-2.47	0.0068	0.9932	99.32	9	-2.97	0.0015	0.9985	99.85	9
-2.48	0.0066	0.9934	99.34	9	-2.98	0.0014	0.9986	99.86	9
-2.49	0.0064	0.9936	99.36	9	-2.99	0.0014	0.9986	99.86	9
					-3.00	0.0013	0.9987	99.87	9