Sample 1	Sample 2	Sample 3	Sample 4
11.55	11.62	11.91	12.02
11.62	11.69	11.36	12.02
11.52	11.59	11.75	12.05
11.75	11.82	11.95	12.18
11.90	11.97	12.14	12.11
11.64	11.71	11.72	12.07
11.80	11.87	11.61	12.05
12.03	12.10	11.85	11.64
11.94	12.01	12.16	12.39
11.92	11.99	11.91	11.65
12.13	12.20	12.12	12.11
12.09	12.16	11.61	11.90
11.93	12.00	12.21	12.22
12.21	12.28	11.56	11.88
12.32	12.39	11.95	12.03
11.93	12.00	12.01	12.35
11.85	11.92	12.06	12.09
11.76	11.83	11.76	11.77
12.16	12.23	11.82	12.20
11.77	11.84	12.12	11.79
12.00	12.07	11.60	12.30
12.04	12.11	11.95	12.27
11.98	12.05	11.96	12.29
12.30	12.37	12.22	12.47
12.18	12.25	11.75	12.03
11.97	12.04	11.96	12.17
12.17	12.24	11.95	11.94
11.85	11.92	11.89	11.97
12.30	12.37	11.88	12.23
12.15	12.22	11.93	12.25

	Sample 1	Sample 2	Sample 3	Sample 4
x_bar =	11.96	12.03	11.89	12.08
mu =	12.00	12.00	12.00	12.00
s =	0.22	0.22	0.21	0.21
n =	30	30	30	30
Test Statistic =	-1.03	0.71	-2.93	2.16
P value =	0.31	0.48	0.01	0.04
Critical Value for 0.01 =	2.76	± 2.76		
Critical Value for 0.05	2.05			
Critical Value for 0.10	1.70			

$H0$:μ=12
$H1$:$\mu\neq$12

We would need to reject the null hypothesis for sample 3. Samples 1, 2, and 4 have p values greater than 0.01 and have test statistics outside the rejection region determined by the critical value of ± 2.76 so we would fail to reject the null hypothesis for those three samples. However, sample 3 has a test statistic inside the rejection region and a p value equal to alpha so corrective action would need to be prescribed.

If the level of significance is changed to a larger value, then the null hypothesis would be rejected with more than just sample 3. If we increased the level of