

```
/*part a*/
data q5;
input x y;
cards;
4.52 1
1.02 2
0.27 3
10.38 4
13.04 5
-4.10 6
8.21 7
-0.64 8
4.35 9
2.74 10
14.00 11
16.05 12
5.57 13
19.23 14
7.52 15
7.01 16
-0.63 17
2.78 18
7.64 19
0.10 20
;
proc print;
run;
proc means data=q5 lclm uclm alpha=0.02;
var x;
run;
/*We are 98% confident that the true mean falls in (2.4375, 9.4685)*/
```

Obs	x	y
1	4.52	1
2	1.02	2
3	0.27	3
4	10.38	4
5	13.04	5
6	-4.10	6
7	8.21	7
8	-0.64	8
9	4.35	9
10	2.74	10
11	14.00	11
12	16.05	12
13	5.57	13
14	19.23	14
15	7.52	15
16	7.01	16
17	-0.63	17
18	2.78	18
19	7.64	19
20	0.10	20

The MEANS Procedure

Analysis Variable : x	
Lower 98% CL for Mean	Upper 98% CL for Mean
2.4374820	9.4685180

```

/*part b*/
data q5;
input x y;
cards;
4.52 1
1.02 2
0.27 3
10.38 4
13.04 5
-4.10 6
8.21 7
-0.64 8
4.35 9
2.74 10
14.00 11
16.05 12
5.57 13
19.23 14
7.52 15
7.01 16
-0.63 17
2.78 18
7.64 19
0.10 20
;
title "Conducting a two-sided T-test";
proc ttest data=q5 H0=5 SIDES=2 alpha= 0.01;
var x;
run;
/* Since the p-value of 0.4995 is greater than alpha=0.01, we fail to reject the null hypothesis. */

```

Conducting a two-sided T-test

The TTEST Procedure

Variable: x

N	Mean	Std Dev	Std Err	Minimum	Maximum
20	5.9530	6.1910	1.3843	-4.1000	19.2300

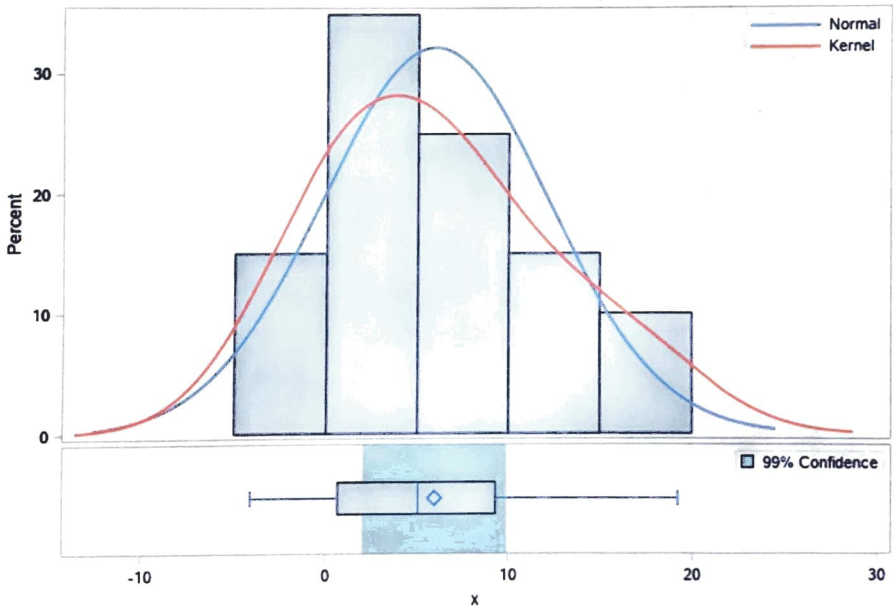
Mean	99% CL Mean	Std Dev	99% CL Std Dev
5.9530	1.9925 9.9135	6.1910	4.3445 10.3153

→ 99% CI true mean

DF	t Value	Pr > t
19	0.69	0.4995

→ p-value

Distribution of x
With 99% Confidence Interval for Mean



Q-Q Plot of x

