

**The UNIVARIATE Procedure**  
**Variable: New\_Test\_score**

Moments			
<b>N</b>	20	<b>Sum Weights</b>	20
<b>Mean</b>	86.4	<b>Sum Observations</b>	1728
<b>Std Deviation</b>	10.4951116	<b>Variance</b>	110.147368
<b>Skewness</b>	-0.609004	<b>Kurtosis</b>	-0.7282436
<b>Uncorrected SS</b>	151392	<b>Corrected SS</b>	2092.8
<b>Coeff Variation</b>	12.14712	<b>Std Error Mean</b>	2.34677831

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Basic Statistical Measures			
Location		Variability	
<b>Mean</b>	86.40000	<b>Std Deviation</b>	10.49511
<b>Median</b>	89.00000	<b>Variance</b>	110.14737
<b>Mode</b>	85.00000	<b>Range</b>	33.00000
		<b>Interquartile Range</b>	15.00000

Tests for Location: $\mu_0=0$				
Test	Statistic		p Value	
<b>Student's t</b>	<b>t</b>	36.81643	<b>Pr &gt;  t </b>	<.0001
<b>Sign</b>	<b>M</b>	10	<b>Pr &gt;=  M </b>	<.0001
<b>Signed Rank</b>	<b>S</b>	105	<b>Pr &gt;=  S </b>	<.0001

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Tests for Normality				
Test	Statistic		p Value	
Shapiro-Wilk	W	0.923234	Pr < W	0.1144
Kolmogorov-Smirnov	D	0.134207	Pr > D	>0.1500
Cramer-von Mises	W-Sq	0.068018	Pr > W-Sq	>0.2500
Anderson-Darling	A-Sq	0.484674	Pr > A-Sq	0.2109

Quantiles (Definition 5)	
Level	Quantile
100% Max	100.0
99%	100.0
95%	99.5
90%	98.5

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Quantiles (Definition 5)	
Level	Quantile
75% Q3	94.5
50% Median	89.0
25% Q1	79.5
10%	68.5
5%	67.5
1%	67.0
0% Min	67.0

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Extreme Observations			
Lowest		Highest	
Value	Obs	Value	Obs
67	19	95	1
68	16	97	20
69	9	98	2
75	5	99	11
79	13	100	7

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Moments			
<b>N</b>	20	<b>Sum Weights</b>	20
<b>Mean</b>	84.05	<b>Sum Observations</b>	1681
<b>Std Deviation</b>	9.33851673	<b>Variance</b>	87.2078947
<b>Skewness</b>	-0.6282835	<b>Kurtosis</b>	-0.6553249
<b>Uncorrected SS</b>	142945	<b>Corrected SS</b>	1656.95
<b>Coeff Variation</b>	11.1106683	<b>Std Error Mean</b>	2.08815582

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Basic Statistical Measures			
Location		Variability	
<b>Mean</b>	84.05000	<b>Std Deviation</b>	9.33852
<b>Median</b>	88.00000	<b>Variance</b>	87.20789
<b>Mode</b>	89.00000	<b>Range</b>	33.00000
		<b>Interquartile Range</b>	13.00000

Tests for Location: $\mu_0=0$				
Test	Statistic		p Value	
<b>Student's t</b>	<b>t</b>	40.25083	<b>Pr &gt;  t </b>	<.0001
<b>Sign</b>	<b>M</b>	10	<b>Pr &gt;=  M </b>	<.0001
<b>Signed Rank</b>	<b>S</b>	105	<b>Pr &gt;=  S </b>	<.0001

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Tests for Normality				
Test	Statistic		p Value	
Shapiro-Wilk	W	0.928333	Pr < W	0.1434
Kolmogorov-Smirnov	D	0.201966	Pr > D	0.0314
Cramer-von Mises	W-Sq	0.110392	Pr > W-Sq	0.0792
Anderson-Darling	A-Sq	0.624977	Pr > A-Sq	0.0914

Quantiles (Definition 5)	
Level	Quantile
100% Max	98.0
99%	98.0
95%	96.0
90%	93.5



**The UNIVARIATE Procedure**  
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Quantiles (Definition 5)	
Level	Quantile
75% Q3	91.0
50% Median	88.0
25% Q1	78.0
10%	70.0
5%	67.0
1%	65.0
0% Min	65.0

**The UNIVARIATE Procedure**  
**Variable: Old\_Test\_score**

Extreme Observations			
Lowest		Highest	
Value	Obs	Value	Obs
65	19	91	20
69	16	92	2
71	5	93	10
72	9	94	1
76	17	98	7

## The TTEST Procedure

Difference: New\_Test\_score - Old\_Test\_score

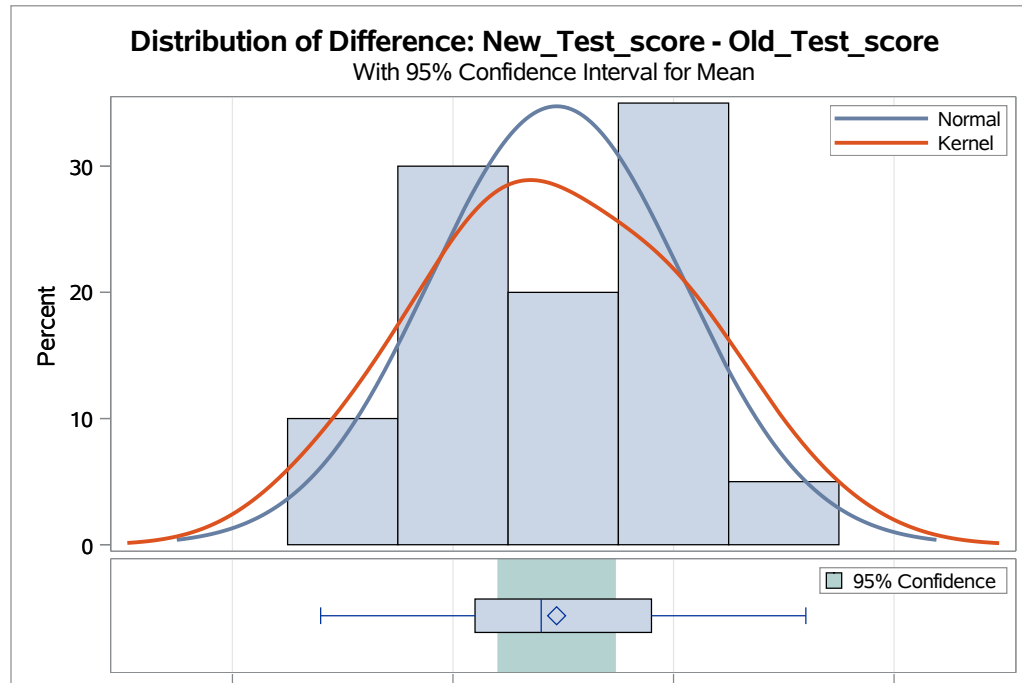
N	Mean	Std Dev	Std Err	Minimum	Maximum
20	2.3500	2.8704	0.6419	-3.0000	8.0000

Mean	95% CL Mean		Std Dev	95% CL Std Dev	
2.3500	1.0066	3.6934	2.8704	2.1829	4.1925

DF	t Value	Pr >  t
19	3.66	0.0017

## The TTEST Procedure

Difference: New\_Test\_score - Old\_Test\_score



## The TTEST Procedure

Difference: New\_Test\_score - Old\_Test\_score

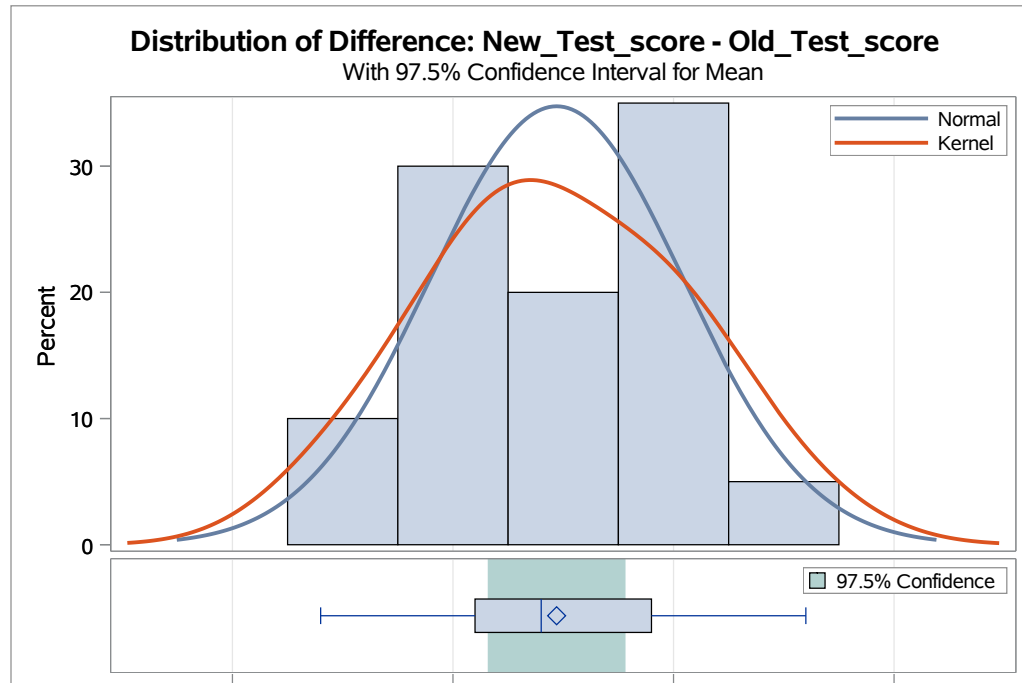
N	Mean	Std Dev	Std Err	Minimum	Maximum
20	2.3500	2.8704	0.6419	-3.0000	8.0000

Mean	97.5% CL Mean		Std Dev	97.5% CL Std Dev	
2.3500	0.7881	3.9119	2.8704	2.1030	4.4472

DF	t Value	Pr >  t
19	3.66	0.0017

## The TTEST Procedure

Difference: New\_Test\_score - Old\_Test\_score





## Cohens D

Obs	mean	stdev	cohens_d
1	2.35	2.87045	0.81869