The response variable is time X (billionths of a second in excess of 24.8 millionths of a second)

Set by command option h0=33.2

The TTEST Procedure

Variable: time

Summary statistics

N	Mean	Std Dev	Std Err	Minimum	Maximum
64	27.7500	5.0834	0.6354	16.0000	40.0000

95% confidence interval for mu_X
26.4802 <= mu_X <= 29.0198

Mean	95% CL Mean	
27.7500	26.4802	29.0198

T_calc = (27.75-33.02)/(0.6354) = -8.29

H_1: mu_X notequal to 33.02 (nondirectional)
P-value<.0001

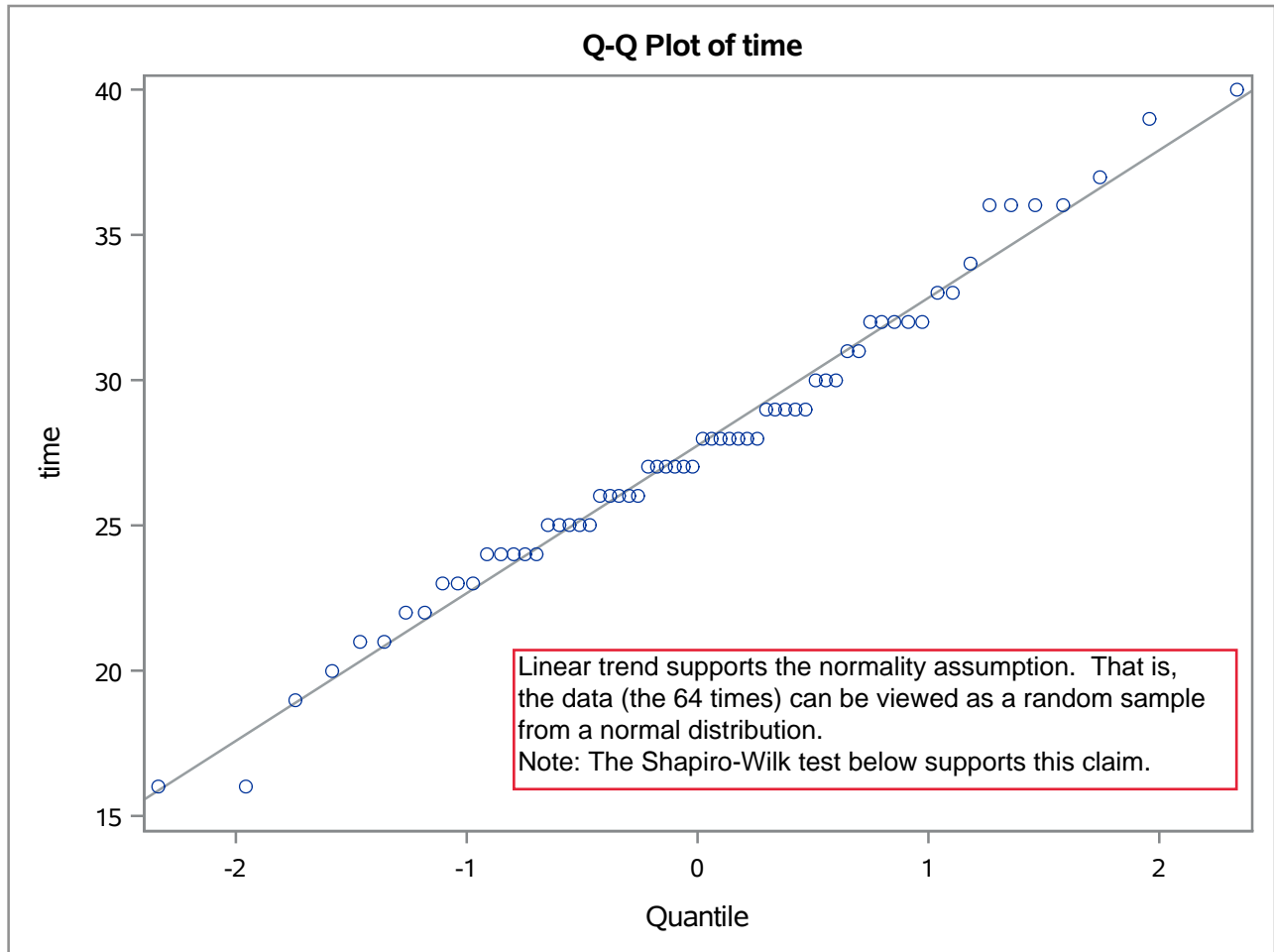| DF	t Value	Pr > |t|
63	-8.29	<.0001
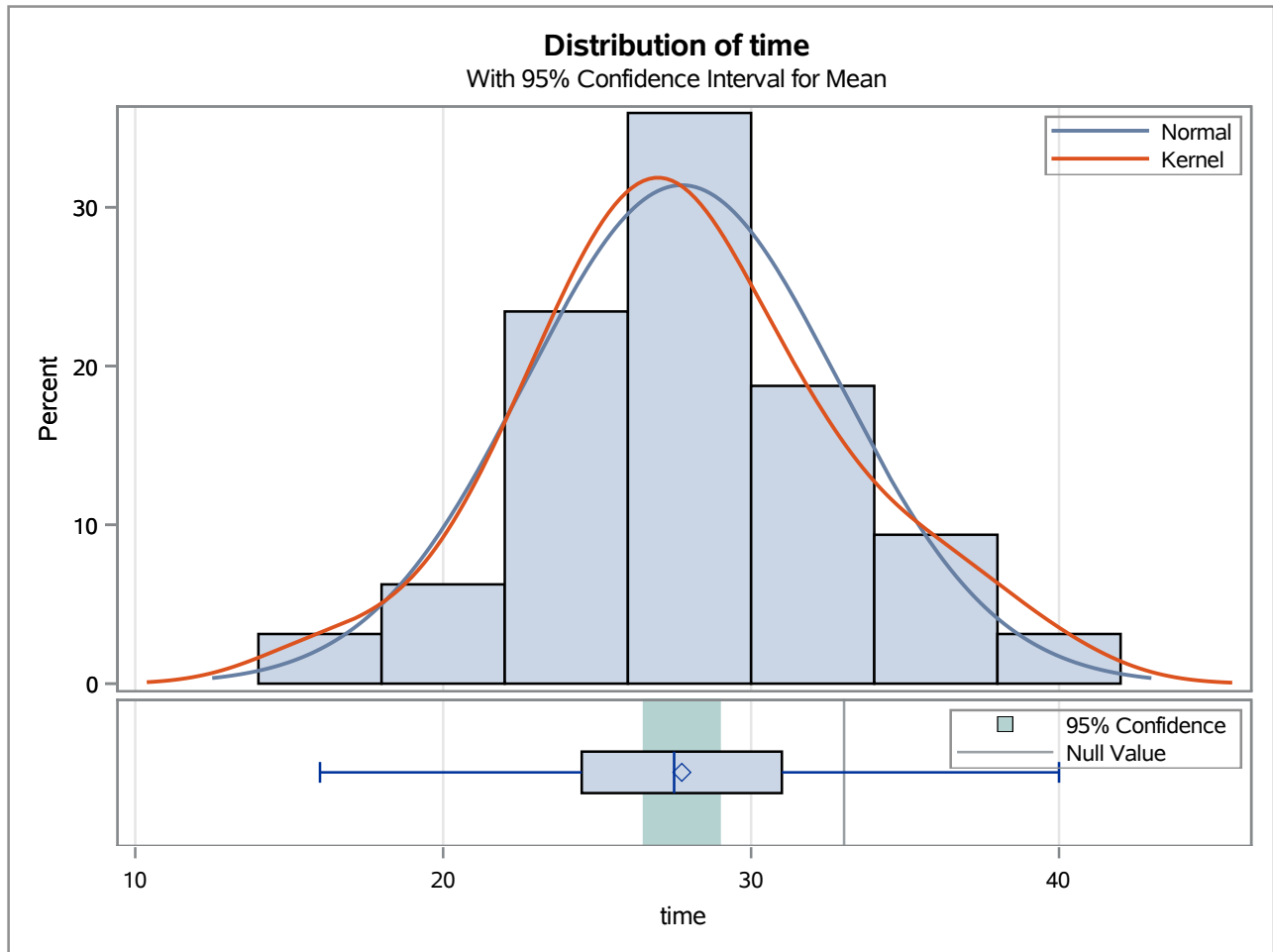
Histogram for the sample of 64 times (values of X) with smoothed histogram (fitted density curve "kernel") and fitted normal density curve.

The TTEST Procedure

Variable: time

Q-Q Plot of time

Linear trend supports the normality assumption. That is, the data (the 64 times) can be viewed as a random sample from a normal distribution.
Note: The Shapiro-Wilk test below supports this claim.

summary and Shapiro-Wilk test: Newcomb example

The UNIVARIATE Procedure
Variable: time

Basic Statistical Measures			
Location		**Variability**	
Mean	27.75000	**Std Deviation**	5.08343
Median	27.50000	**Variance**	25.84127
Mode	28.00000	**Range**	24.00000
		Interquartile Range	6.50000

Tests for Normality				
Test	**Statistic**		**p Value**	
Shapiro-Wilk	W	0.984615	Pr < W	0.6082
Kolmogorov-Smirnov	D	0.090381	Pr > D	>0.1500
Cramer-von Mises	W-Sq	0.063807	Pr > W-Sq	>0.2500
Anderson-Darling	A-Sq	0.381281	Pr > A-Sq	>0.2500

Test for normality assumption

The null hypothesis is that the data (the 64 times) form a random sample from a normal distribution. The large P-value .6082 shows supports for the normality assumption.

Quantiles (Definition 5)	
Level	**Quantile**
100% Max	40.0
99%	40.0
95%	36.0
90%	36.0
75% Q3	31.0
50% Median	27.5
25% Q1	24.5
10%	22.0
5%	20.0
1%	16.0
0% Min	16.0

The distribution is reasonably symmetric

med-min=11.5
max-med=12.5
(very slight skewness to the right)

Extreme Values					
Lowest			**Highest**		
Order	**Value**	**Freq**	**Order**	**Value**	**Freq**
1	16	2	17	34	1
2	19	1	18	36	4
3	20	1	19	37	1
4	21	2	20	39	1
5	22	2	21	40	1

No extreme outliers