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Consider the graphs on the previous page.

The Wilcoxon Signed Rank would be appropriate for which of the data sets?

Circle all that apply.

**Days**

LOS

**100s**

**Doortoroom**

Doortodoc

$thousands

The two-sample t-test would be appropriate for which of the data sets?

Circle all that apply.

Days

**LOS**

100s

Doortoroom

**Doortodoc**

**$thousands**

Consider the Minitab output on the following pages.

What is the conclusion for the ANOVA?

*Based on a p-value of 0.181, we can conclude that there is not a significant difference in the average doortodoc times based on patient height.*

*Based on a p-value of 0.181, we can conclude that there is not a significant difference in the average doortodoc times for the three categories of patient height.*

What is the conclusion for the 2-sample t?

*Based on a p-value of 0.094, we can conclude that there is no significant difference in the average doortodoc times based on patient gender.*

*Based on a p-value of 0.094, we can conclude that there is no significant difference in the average doortodoc times for males and females.*

What is the conclusion for the Wilcoxon signed rank?

*Based on a p-value of 0.026, we can conclude that the median length of stay is significantly less than 40.*

Should you conduct a Tukey for the one way ANOVA?

*No, because the ANOVA results indicate there is no significant difference in the mean doortodoc times for the three groups.*

*Based on a p-value of 0.181, we can conclude that there is no significant difference in the average doortodoc times for the three levels of height. Therefore there is no need to conduct a Tukey test.*

Which of the outputs showed the appropriate test for the doortodoc data?

*Since the doortodoc data is normally distributed, the sample size is less than 30, there are two samples, and sigma is unknown, the two-sample t-test is the appropriate test.*

*Since the doortodoc data is normally distributed and there are three samples, the ANOVA is the appropriate test, when compared to the Kruskal-Wallis.*

Minitab Output

**One-way ANOVA: doortodoc versus Patient Height**

Method

Null hypothesis All means are equal

Alternative hypothesis At least one mean is different

Significance level α = 0.05

Equal variances were assumed for the analysis.

Factor Information

Factor Levels Values

Patient Height 3 High, Low, Medium

Analysis of Variance

Source DF Adj SS Adj MS F-Value P-Value

Patient Height 2 392.1 196.0 1.92 0.181

Error 15 1533.5 102.2

Total 17 1925.6

\*\*\*\*\*\*\*

**Two-sample T for doortodoc**

Gender\_MF N Mean StDev SE Mean

F 9 19.4 11.0 3.7

M 9 27.82 8.91 3.0

Difference = μ (F) - μ (M)

Estimate for difference: -8.43

95% CI for difference: (-18.50, 1.63)

T-Test of difference = 0 (vs ≠): T-Value = -1.79 P-Value = 0.094 DF = 15

\*\*\*\*\*\*\*

**Kruskal-Wallis Test: doortodoc versus Patient Height**

Kruskal-Wallis Test on doortodoc

Patient

Height N Median Ave Rank Z

High 6 23.15 10.9 0.80

Low 6 14.00 6.0 -1.97

Medium 6 29.60 11.6 1.17

Overall 18 9.5

H = 3.92 DF = 2 P = 0.141

H = 3.92 DF = 2 P = 0.141 (adjusted for ties)

MTB > Mood 'LOS' 'malefemale'.

\*\*\*\*\*\*

**Mood Median Test: LOS versus malefemale**

Mood median test for LOS

Chi-Square = 1.17 DF = 1 P = 0.280

Individual 95.0% CIs

malefemale N≤ N> Median Q3-Q1 ----+---------+---------+---------+--

F 2 4 44.8 33.6 (--------------------\*-----------)

M 5 3 24.8 30.5 (---\*------------------------)

----+---------+---------+---------+--

24 36 48 60

Overall median = 30.8

A 95.0% CI for median(F) - median(M): (-21.7,34.8)

\*\*\*\*\*\*

**Wilcoxon Signed Rank Test: LOS**

Test of median = 49.00 versus median < 49.00

N for Wilcoxon Estimated

N Test Statistic P Median

LOS 14 14 21.0 0.026 38.00

MTB > OneT 'LOS';

SUBC> Test 45;

SUBC> Confidence 95.0;

SUBC> Alternative -1.

\*\*\*\*\*\*

**One-Sample T: LOS**

Test of μ = 45 vs < 45

Variable N Mean StDev SE Mean 95% Upper Bound T P

LOS 14 37.29 18.60 4.97 46.09 -1.55 0.072

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Data for design

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