

IASSC

Exam Questions ICBB

IASSC Certified Lean Six Sigma Black Belt



NEW QUESTION 1

When we gather information for the Voice of the Business we are primarily interested in information concerning the _____ of the business.

- A. Advertising budget
- B. Market share
- C. Profitability
- D. Ownership

Answer: C

NEW QUESTION 2

Of the various types of data shown below which is NOT representative of Variable Data.

- A. Length of a table
- B. Liters of solution added to a formula
- C. Number of employees wearing a uniform
- D. Miles per hour of a vehicle

Answer: C

NEW QUESTION 3

Appropriate measures means that measurements are _____.

- A. Representative
- B. Sufficient
- C. Contextual
- D. Relevant
- E. All of these answers are correct

Answer: E

NEW QUESTION 4

A Belt working in a supply chain environment has to make a decision to change suppliers of critical raw materials for a new product upgrade. The purchasing manager is depending on the Belt's effort requiring that the average cost of an internal critical raw material component be less than or equal to \$4,200 in order to stay within budget. Using a sample of 35 first article components, a Mean of the new product upgrade price of \$4,060, and a Standard Deviation of \$98 was estimated. The Alternative Hypothesis in the above example is?

- A. The Standard Deviation is equal to \$300.
- B. The Mean is less than \$4,320.
- C. The Mean is equal to \$4,060.
- D. The Mean is less than \$4,200.
- E. The Mean is greater than \$ 4,200.

Answer: E

NEW QUESTION 5

For the data shown here which statement(s) are true?(Note:There are 2 correct answers).

Grade A	Grade B	Grade C
0.917	1.1	0.63
0.68	0.173	4.17
1.74	0.24	0.6
0.3	0.67	0.84
0.33	6.94	0.22
4.13		

- A. With 95% confidence, we cannot conclude if the samples are from three Normal Distributions.
- B. With greater than 95% confidence, we conclude the samples are from Non-normal Distributions.
- C. If we wanted to compare the Central Tendencies of these three samples we would use the one way ANOVA test.
- D. If we wanted to compare the Central Tendencies of these three samples we could use Mood's Median test.

Answer: BD

NEW QUESTION 6

A Full Factorial experiment using a 3 level 3 factor approach has been proposed to test the viability of an extrusion machine experiment. How many treatment combinations will this approach involve?

- A. 6
- B. 9
- C. 27
- D. 54

Answer: C

NEW QUESTION 7

Which of these graphical presentations displays the values of each individual reading?

- A. Histogram
- B. Box Plot
- C. Stem and Leaf Plot
- D. X-Y Diagram

Answer: C

NEW QUESTION 8

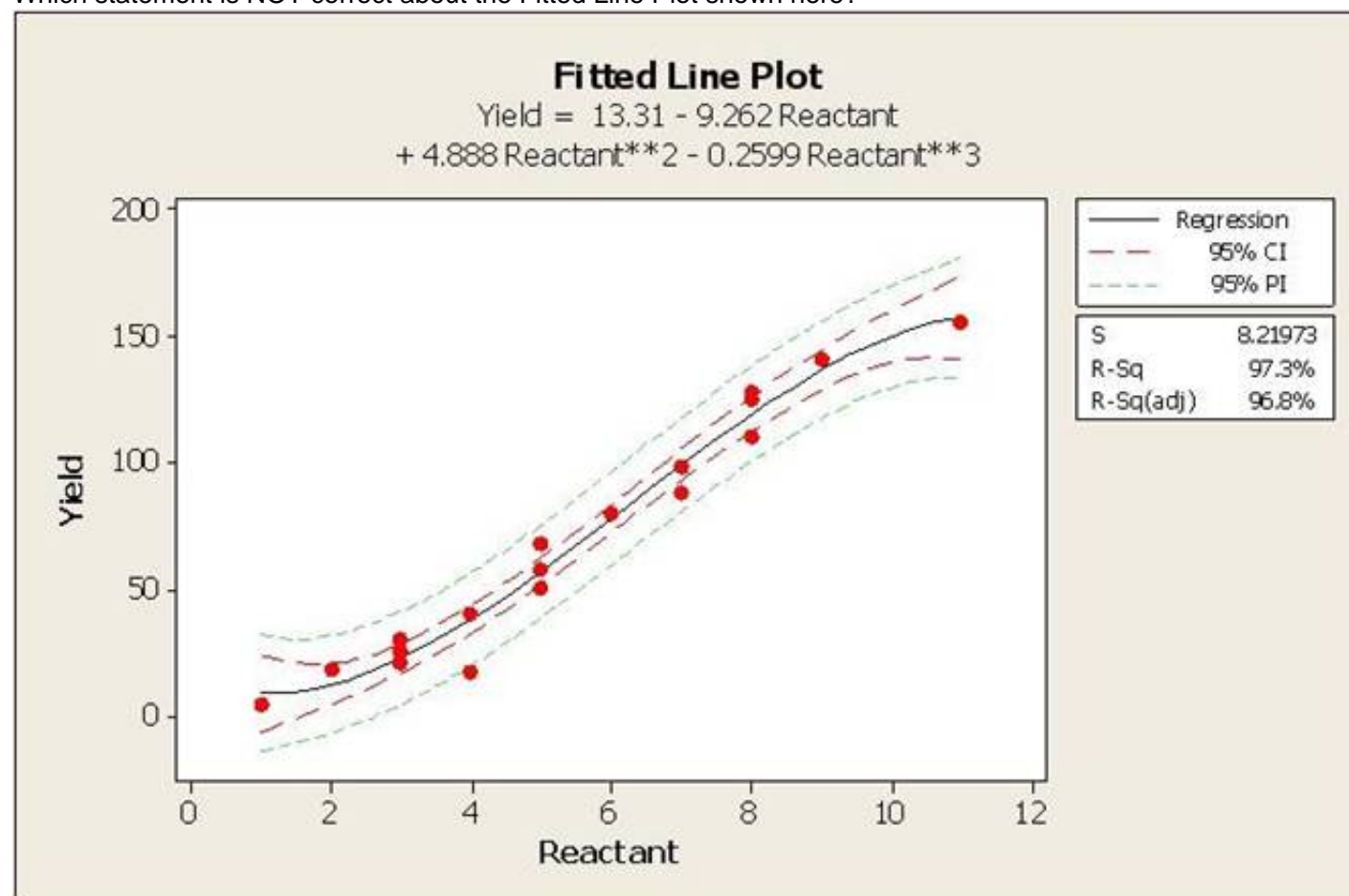
A(n) _____ is best used to compare a Machine 1 average quality characteristic to the same quality characteristic of Machine 2.

- A. 1-Sample t-test
- B. 2-Sample t-test
- C. F test
- D. ANOVA test

Answer: B

NEW QUESTION 9

Which statement is NOT correct about the Fitted Line Plot shown here?



- A. The independent variable is the reactant
- B. If the reactant was 6 units, with 95 % confidence we would expect a minimum yield of 100 units
- C. With at least 95% confidence, we can expect less than 10 units of Yield when the reactant is at a value of 1
- D. A reactant value between 2 and 4 units yields around 20 to 40
- E. When the reactant increases, the expected yield would increase

Answer: D

NEW QUESTION 10

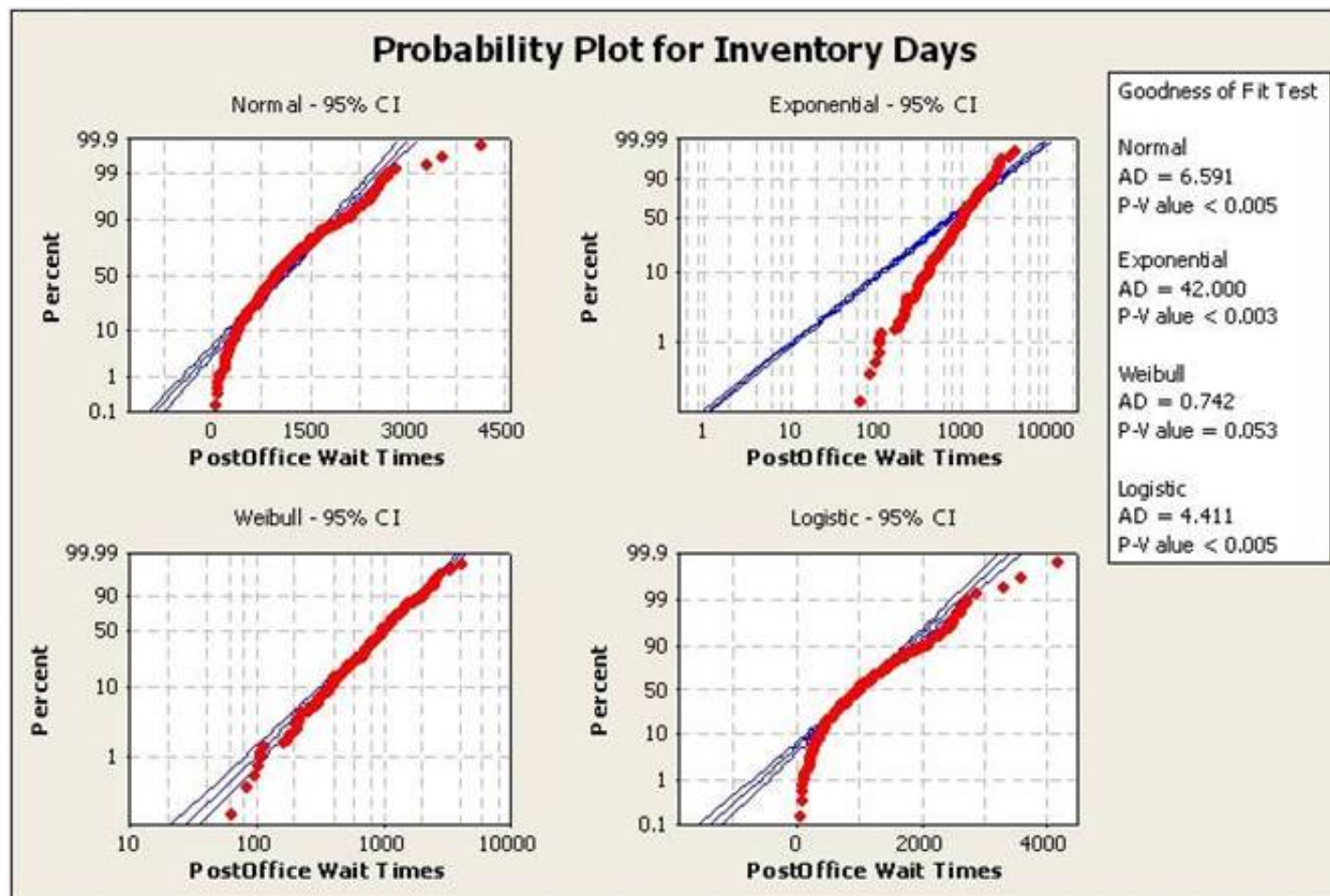
When the Inputs, X's, for your process are Normally Distributed about the Mean, the Outputs, Y's, will be Normally Distributed.

- A. True
- B. False

Answer: B

NEW QUESTION 10

A Lean Six Sigma project is attempting to reduce inventory days. The Process Capability will be monitored as part of the Control Phase to track the sustainability of the improvement.



Which distribution type is best used for performing the Capability Analysis?

- A. Weibull Distribution
- B. Normal Distribution
- C. Exponential Distribution
- D. Logistic Distribution
- E. Gaussian Distribution

Answer: A

NEW QUESTION 15

The _____ is the most frequently occurring value in a distribution of data.

- A. Median
- B. Mean
- C. Mode
- D. Center Point

Answer: C

NEW QUESTION 19

Those people who have a interest in the outputs of a process are known as _____ .

- A. Stakeholders
- B. Senior management
- C. Co-workers
- D. Process owners

Answer: A

NEW QUESTION 24

On a _____ a Belt screens variables, or various inputs, to analyze their relative impact on the output of concern.

- A. X-Y Matrix
- B. Weighted Scale
- C. Multi-Vari Chart
- D. Poisson Chart

Answer: C

NEW QUESTION 26

Fractional Factorial designs are used to reduce the _____ because the number of runs has been lowered.

- A. Time and cost of experiments
- B. Number of people involved
- C. Number of data measurement points
- D. Output summary

Answer: A

NEW QUESTION 31

An operator is measuring the distance between two points. Which is most likely to be influenced by the operator?

- A. Precision of the measurement
- B. Accuracy of the measurement
- C. Calibration of the instrument
- D. All of these answers are correct

Answer: D

NEW QUESTION 35

What conclusion is most correct about the Experimental Design shown here with the response in the far right column?

Adv	Bev	Des	Crux	Response
-1	-1	-1	-1	20
1	-1	-1	1	14
-1	1	-1	1	17
1	1	-1	-1	10
-1	-1	1	1	19
1	-1	1	-1	13
-1	1	1	-1	14
1	1	1	1	10

- A. No factor has enough statistical confidence greater than 95% to have an impact on the response rate
- B. Constant, Adv and Bev are the only factors statistically affecting the response rate with 95% confidence or more
- C. If the Adv is increased from the low level to the high level, the response rate increases
- D. The response level is statistically concluded to only need the Adv and Bev factors set at the low level to get the largest response rate
- E. This design does not have enough experimental runs to conclude anything as evidenced by the lack of P-values in the MINITABTM output

Answer: D

NEW QUESTION 38

Accuracy can be assessed in several ways and a fairly accurate means of measurement is visual comparison.

- A. True
- B. False

Answer: B

NEW QUESTION 39

The Control Limits width varies if the sample size varies for which type of chart?

- A. P Charts
- B. NP Charts
- C. Xbar-R Charts
- D. Time Series Charts

Answer: A

NEW QUESTION 43

Upon completion and validation of an improvement to a process a Belt and the Project Team create a Control Plan that contains which of these?

- A. Standard operating work description of the process change
- B. Description of the monitoring system in place to assure continued compliance
- C. Summary of the targeted critical metrics for process performance measurement
- D. All of the above

Answer: D

NEW QUESTION 45

For a Kanban to be successful which of these must occur?

- A. Consistent cycle times
- B. Fairly stable process demand of product or service
- C. Low defect rate of incoming product or service
- D. All of the above

Answer: D

NEW QUESTION 47

Calculate the Rolled Throughput Yield of this process using this data. Data: unit input: 1215, unit output: 1180, defects repaired: 184, scrap: 42

- A. 80.85%
- B. 81.40%
- C. 82.23%
- D. 84.96%

Answer: B

NEW QUESTION 50

Calculate the Rolled Throughput Yield of this process using this data. Data: unit input: 1450, unit output: 1390, defects repaired: 320, scrap: 60

- A. 71.33%
- B. 72.66%
- C. 73.79%
- D. 77.93%

Answer: B

NEW QUESTION 51

A Non-parametric Test should be used if just one distribution is not Normal out of the two or more gathered.

- A. True
- B. False

Answer: A

NEW QUESTION 53

To be an effective Lean Six Sigma practitioner one must understand the difference between _____.

- A. ANOVA and the Analysis of Variance
- B. Nonparametric tests and tests of Non-normal Data
- C. F-test and test of variances of 2 samples
- D. Practical and Statistical significance

Answer: D

NEW QUESTION 55

Which statement(s) are incorrect about Fractional Factorial Designs?

- A. A Half Fractional Design for 5 factors has the same number of experimental runs as a Full Factorial Design for 4 factors assuming no repeats or replicates or Center Points
- B. Quarter Fractional experiments can exist for those with 4 factors
- C. Resolution V design is desired while controlling costs of experimentation
- D. Half Fractional experiments do not exist for those designs with only 2 factors

Answer: C

NEW QUESTION 60

The Lean toolbox includes all of the following items except _____.

- A. Poke-Yoke
- B. Standard Operating Procedures
- C. Kaizen
- D. 5S the work area

Answer: B

NEW QUESTION 62

Which statement is most correct for the Regression Analysis shown here?

Regression Analysis: Turbine Output versus Air-Fuel Ratio, % steam, ...

The Regression Equation is
TurbineOutput = 16.5 + 3.21 Air-Fuel Ratio + 0.386 % methane
+ 0.0166 SteamExitTemp

Predictor	Coef	SE Coef	T	P
Constant	16.488	2.918	5.65	0.000
Air-Fuel Ratio	3.2148	0.2377	13.52	0.000
% methane	0.38637	0.07278	5.31	0.000
SteamExitTemp	0.016576	0.004273	3.88	0.004

S = 0.508616 R-Sq = 98.6% R-Sq(adj) = 98.2%					
Analysis of Variance					
Source	DF	SS	MS	F	P
Regression	3	170.003	56.668	219.06	0.000
Residual Error	9	2.328	0.259		
Total	12	172.331			

Source	DF	Seq SS
Air-Fuel Ratio	1	159.048
% methane	1	7.062
SteamExitTemp	1	3.892

- A. The Regression explains 50.8% of the process variation
- B. The air-fuel ratio explains most of the TurbineOutput variation
- C. This Simple Linear Regression explains 98+% of the process variation
- D. This Multiple Linear Regression has four statistically significant independent variables

Answer: B

NEW QUESTION 65

With Measurement System Analysis we are concerned with two issues that impact the potential variability of the data. They are _____.

- A. Precision and Accuracy
- B. Reliability and Repeatability
- C. Error and Spread
- D. Sensitivity and Deflection

Answer: A

NEW QUESTION 70

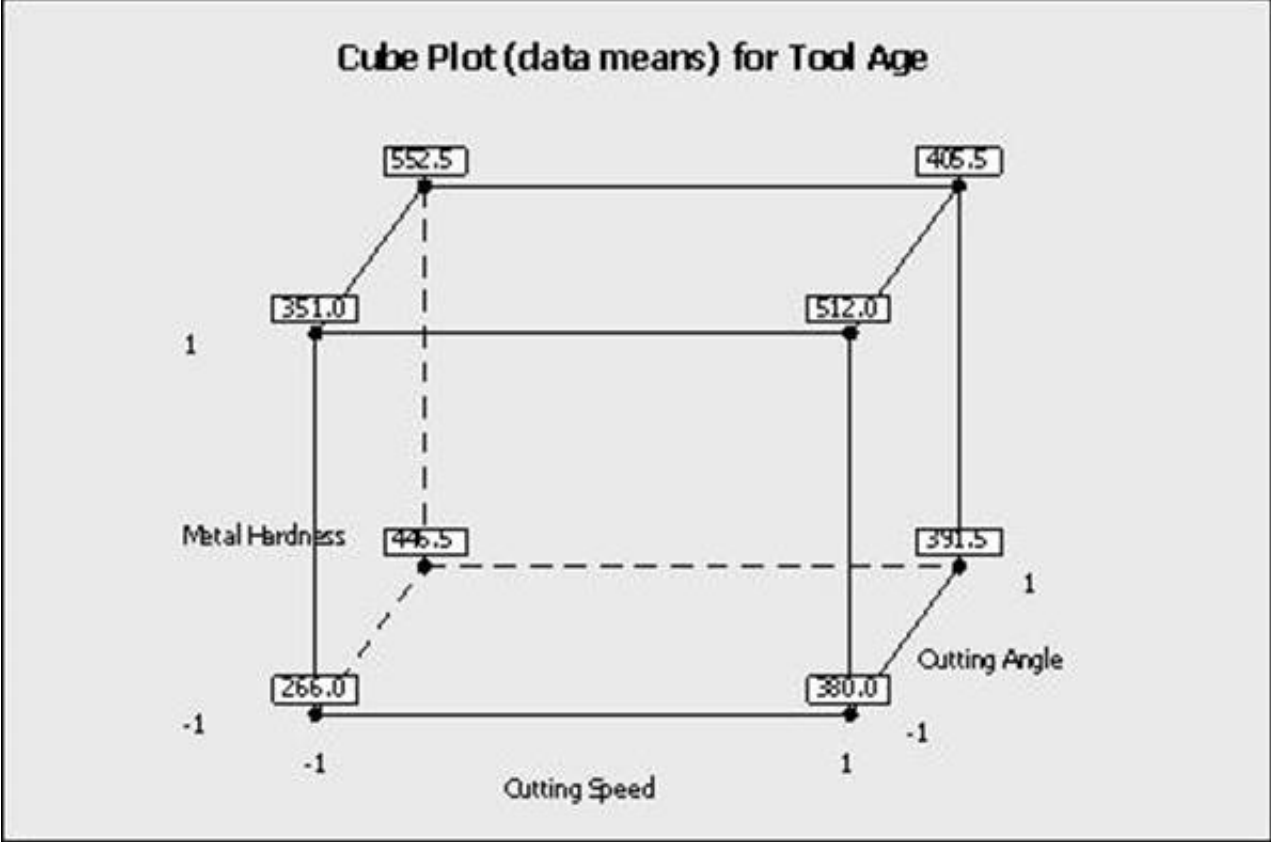
All the data points that represent the total set of information of interest is called the _____.

- A. Population
- B. Sample
- C. Frame
- D. Spread

Answer: A

NEW QUESTION 73

Which statement(s) are correct about the Factorial Plot shown here?(Note:There are 3 correct answers).



- A. When the cutting speed increased from low to high level, the tool age increases
- B. The coefficient of the metal hardness is positively related to the output of tool age
- C. The coded coefficient is lower for cutting speed than the cutting angle related to the output of tool age
- D. These plots prove a statistically significance factor with 95% confidence
- E. These plots are an example of interaction plots

Answer: ABC

NEW QUESTION 74

When a Belt properly analyzes the results of an experiment he must examine the Residuals in expectation of finding all of the following except _____.

- A. Some Residuals higher than others
- B. Residuals will represent a Linear Regression
- C. All Residuals within 2 Standard Deviations of the Mean
- D. Some Residuals lower than others

Answer: B

NEW QUESTION 75

It would be more likely than not for a Belt conducting a Regression Analysis to find that the_____.

- A. r^2 value is smaller than the absolute value of r
- B. Correlation Coefficient equals r^2
- C. Coefficient of Determination is less than r^2
- D. Correlation Coefficient equals r divided by 2

Answer: A

NEW QUESTION 78

It would be more likely than not for a Belt conducting a Regression Analysis to find that the_____.

- A. r^2 value is smaller than the absolute value of r
- B. Correlation Coefficient equals r^2
- C. Coefficient of Determination is less than r^2
- D. Correlation Coefficient equals r divided by 2

Answer: A

NEW QUESTION 79

Cost of Poor Quality (COPQ) can be classified as Visible Costs and Hidden Costs. All these items are Hidden Cost except _____.

- A. Lost Customer Loyalty
- B. Returns
- C. Time Value of Money
- D. Late Delivery

Answer: B

NEW QUESTION 82

A Belt is analyzing data and upon creation of the graphical analysis sees multiple modes. One of the primary reasons this could occur is because the process has experienced a _____.

- A. Significant change from one shift to another
- B. Sizable Measurement System error
- C. Catastrophic failure of some sort
- D. Any one of these

Answer: D

NEW QUESTION 83

Much of the Six Sigma methodology is used to identify and remove causes for _____.

- A. Process Variation
- B. Material Costs
- C. Excess Inventory
- D. Lost Sales

Answer: A

NEW QUESTION 88

Assessing process proportion as opposed to evaluating a process with respect to a set target can be done using which of these?

- A. Process proportion equals some value range
- B. Process proportion equals some desired value
- C. Target is current

D. Proportion of the tail is equal

Answer: B

NEW QUESTION 91

The Control Limits width varies if the sample size varies for which type of chart?

- A. P Charts
- B. NP Charts
- C. Xbar-R Charts
- D. Time Series Charts

Answer: A

NEW QUESTION 93

The Central Limit Theorem says that as the sample size becomes large the sample Mean distribution will form a Normal Distribution, _____.

- A. If the Measurement System is properly calibrated
- B. When the data is collected accurately
- C. If the shape is evenly spread
- D. No matter what the shape of the population distribution of individuals

Answer: D

NEW QUESTION 95

Common and _____ Cause Variation are the focus of Statistical Process Control.

- A. Uncommon
- B. Ordinary
- C. Special
- D. Selective

Answer: C

NEW QUESTION 100

When we compare short-term and long-term Capability which of these is true?

- A. Cp is better for the short term
- B. Both short-term and long-term performance are alike
- C. Performance tends to improve over time
- D. Cp is better for the long-term

Answer: A

NEW QUESTION 101

For her injection molding project a _____ Belt needed to track the percentage of defectives of a particular sample set so she used a to display the data?

- A. Individual Chart
- B. C Chart
- C. Xbar Chart
- D. P Chart

Answer: D

NEW QUESTION 105

Common and Special Cause _____ are the focus of Statistical Process Control.

- A. Prediction
- B. Ideation
- C. Capability
- D. Variation

Answer: D

NEW QUESTION 108

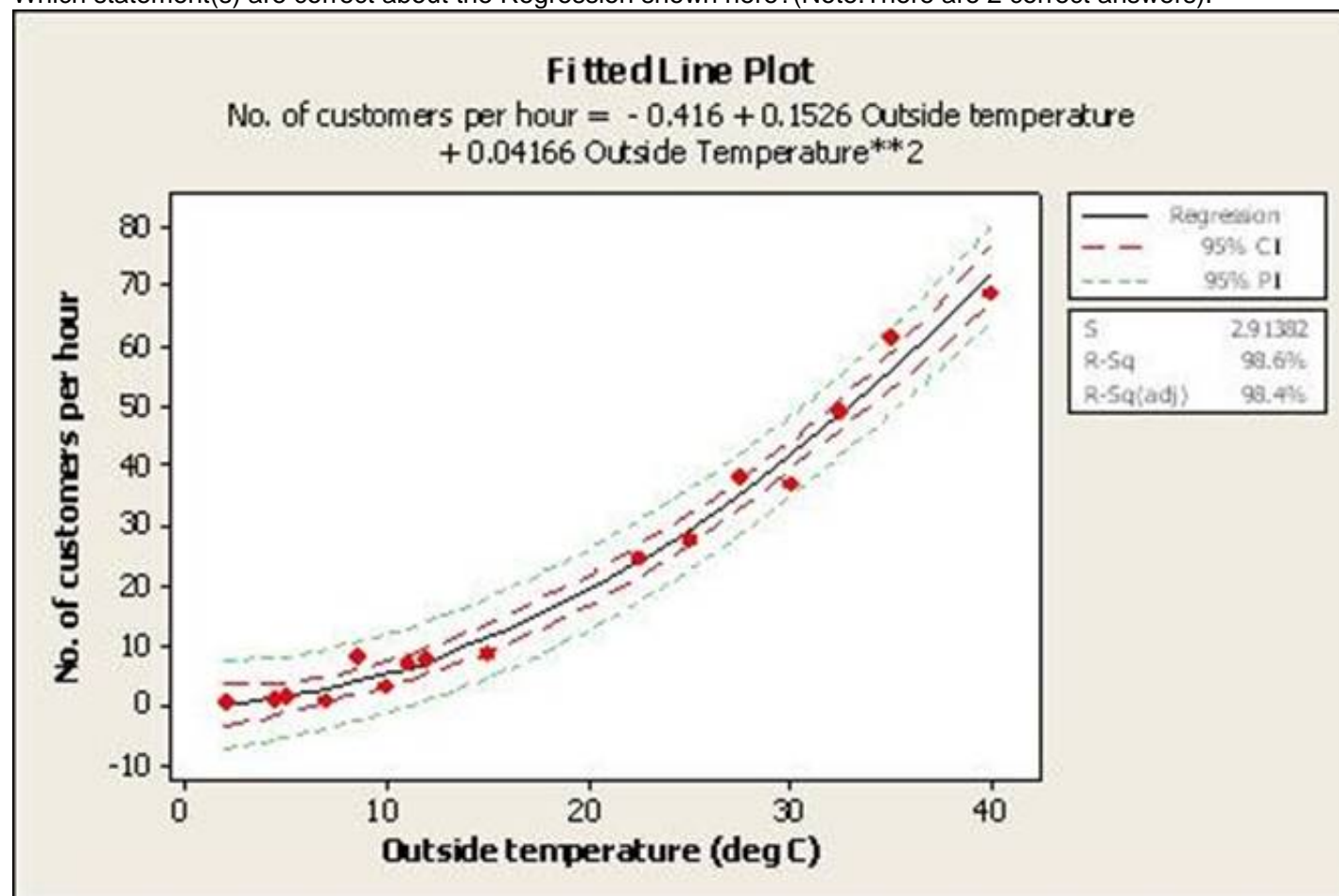
Data that can be measured on a continuum and has meaningful decimal subdivisions are _____ data.

- A. Continuous
- B. Surplus
- C. Discrete
- D. Variable

Answer: A

NEW QUESTION 110

Which statement(s) are correct about the Regression shown here?(Note:There are 2 correct answers).



- A. The dependent variable is the outside temperature
- B. The relationship between outside temperature and number of customers per hour is a Linear Regression
- C. The dashed lines indicate with 95% confidence where all of the process data should fall between
- D. The dashed lines indicate with 95% confidence the estimate for the Quadratic Regression Line
- E. The predicted number of customers per hour is close to 5 if the outside temperature is 10 deg C

Answer: DE

NEW QUESTION 111

When the Inputs, X's, for your process are Normally Distributed about the Mean, the Outputs, Y's, will always be Normally Distributed.

- A. True
- B. False

Answer: B

NEW QUESTION 112

A Belt rearranged the location of the parts inventory for a rework station locating the most often used parts to be within hand reach of the repair person. This rearrangement resulted in quicker repair times by eliminating one of seven major elements of waste which is the Waste of _____ .

- A. Motion
- B. Conveyance
- C. Inventory
- D. Waiting

Answer: A

NEW QUESTION 117

How many experimental runs exist in a Full Factorial and fully randomized design for 4 factors with 2 replicates for the Corner Points and no Center Points? The factors in the experiment are only at 2-levels.

- A. 10
- B. 32
- C. 256
- D. 64

Answer: B

NEW QUESTION 120

Production Line 1 is able to complete 500 units per shift. Production Line 2 is able to finish 1,500 units per shift. Production Line 2 is 3 times faster than Production Line 1. This analysis is an example of _____ Scale Data.

- A. Nominal
- B. Ratio
- C. Ordinal
- D. Interval

Answer: B

NEW QUESTION 124

The English words used for the 5S's are Sorting, Straightening, _____, _____ and Sustaining. (Note: There are 2 correct answers).

- A. Shaping
- B. Shining
- C. Standardizing
- D. Signing

Answer: BC

NEW QUESTION 125

Which statement(s) are incorrect about Fractional Factorial Designs?

- A. A Half Fractional Design for 5 factors has the same number of experimental runs as a Full Factorial Design for 4 factors assuming no repeats or replicates or Center Points
- B. Quarter Fractional experiments can exist for those with 4 factors
- C. Resolution V design is desired while controlling costs of experimentation
- D. Half Fractional experiments do not exist for those designs with only 2 factors

Answer: C

NEW QUESTION 127

If a Belt needed to model the data for the number of weaves in section of carpet fabric she would use the _____ Distribution approach.

- A. Poisson
- B. Extended
- C. Exponential
- D. Weibull

Answer: A

NEW QUESTION 131

All the data points that represent the total set of information of interest is called the _____.

- A. Population
- B. Sample
- C. Frame
- D. Spread

Answer: A

NEW QUESTION 135

What conclusion is most correct about the Experimental Design shown here with the response in the far right column?

Adv	Bev	Des	Crux	Response
-1	-1	-1	-1	20
1	-1	-1	1	14
-1	1	-1	1	17
1	1	-1	-1	10
-1	-1	1	1	19
1	-1	1	-1	13
-1	1	1	-1	14
1	1	1	1	10

- A. No factor has enough statistical confidence greater than 95% to have an impact on the response rate
- B. Constant, Adv and Bev are the only factors statistically affecting the response rate with 95% confidence or more
- C. If the Adv is increased from the low level to the high level, the response rate increases
- D. The response level is statistically concluded to only need the Adv and Bev factors set at the low level to get the largest response rate
- E. This design does not have enough experimental runs to conclude anything as evidenced by the lack of P-values in the MINITABTM output

Answer: D

NEW QUESTION 137

A dock worker for a feed supplier was tasked with assuring the proper weight in the feed bags as they left the dock. One of the columns listed the range of weight of the bags included in the studies. This required plotting a Histogram of the weight of the bags. While drawing the Histogram the x-axis contained a certain scale of data. Pick the scale of data that is appropriate for Histograms.

- A. Ordinal Scale Data

- B. Interval Scale Data
- C. Nominal Scale Data
- D. Ration Scale Data

Answer: B

NEW QUESTION 142

The Lean toolbox includes all of these items except _____.

- A. Mistake Proofing
- B. Visual Factory
- C. Design of Experiments
- D. Inventory Management

Answer: C

NEW QUESTION 145

When variation is removed from the output of a process then the process customer can have more confidence in the experience that results from the process.

- A. True
- B. False

Answer: A

NEW QUESTION 149

Since Normality is required if we intend to use the data collected as a predictive tool. To test for Normality of data we must determine if the P-value is _____.

- A. Equal to 0.05
- B. Less than 0.05
- C. Greater than 0.05
- D. Greater than 0.5

Answer: C

NEW QUESTION 154

On a _____ one can see a pattern from the graphed points such that conclusions can be drawn about the largest family of Variation.

- A. Multi-Vari Chart
- B. Weighted Scale
- C. X-Y Matrix
- D. Poisson Chart

Answer: A

NEW QUESTION 156

Which of the items listed do not define what an X-Y Diagram is?

- A. Created for every project
- B. Based on team's collective opinions
- C. Updated whenever a parameter is changed
- D. Used to show each step in a process
- E. A living document throughout project lifecycle

Answer: D

NEW QUESTION 160

Following the completion of a LSS project the Belt not only creates a Control Plan he also develops a _____ so those involved in the process know what to do when the critical metrics move out of spec.

- A. Response Plan
- B. Call List
- C. Chain-of-Command
- D. Defect Analysis Plan

Answer: A

NEW QUESTION 165

Which of these graphs demonstrates conditions which would be sufficient to enable OCAP for the process?

- A. Xbar Chart
- B. Time Series Chart
- C. Neither
- D. Both

Answer: A

NEW QUESTION 169

A valuable tool to use during the Measure Phase to show material and information flow throughout an entire process is the _____.

- A. Value Stream Map
- B. FMEA
- C. Pareto Chart
- D. Standard Operating Procedure

Answer: A

NEW QUESTION 172

When conducting a Hypothesis Test using Continuous Data the proper sample size is influenced by the extent to which we need to assess a Difference to be detected and the inherent variation in the process.

- A. True
- B. False

Answer: A

NEW QUESTION 173

What is the Ppk of a process with a spread of 24 units, an average of 68, an upper limit of 82 and a lower limit of 54?

- A. 1.68
- B. 2.00
- C. 4.00
- D. 4.42

Answer: C

NEW QUESTION 177

A Belt working in a supply chain environment has to make a decision to change suppliers of critical raw materials for a new product upgrade. The purchasing manager is depending on the Belt's effort requiring that the average cost of an internal critical raw material component be less than or equal to \$4,200 in order to stay within budget. Using a sample of 35 first article components, a Mean of the new product upgrade price of \$4,060, and a Standard Deviation of \$98 was estimated. The Alternative Hypothesis in the above example is?

- A. The Standard Deviation is equal to \$300
- B. The Mean is less than \$4,320
- C. The Mean is equal to \$4,060
- D. The Mean is less than \$4,200
- E. The Mean is greater than \$ 4,200

Answer: E

NEW QUESTION 178

Sally and Sara sell flower pots at their garage sale. Sally motivates Sara mentioning that they will sell a minimum of 15 pots per day if the outside temperature exceeds 60o F. From a sample, whose population is assumed to follow a Normal Distribution, taken for 30 days at 60 degrees or more an average of 13.6 pots per day were sold with a Standard Deviation of 0.7 pots. The statistical Degrees of Freedom for this example are?

- A. 1
- B. 29
- C. 30
- D. 31
- E. 2

Answer: B

NEW QUESTION 181

Kanban establishes a means of monitoring production, conveyance and delivery information such that efficient flow is established. The method used by Kanban is to require a _____ before anything moves.

- A. Sign-off
- B. Signal
- C. Bell to ring
- D. Work order

Answer: B

NEW QUESTION 184

The _____ is the most frequently occurring value in a distribution of data.

- A. Median
- B. Mean
- C. Center Point
- D. Mode

Answer:

D

NEW QUESTION 185

To be an effective Lean Six Sigma practitioner one must understand the difference between _____ .

- A. ANOVA and the Analysis of Variance
- B. Nonparametric tests and tests of Non-normal Data
- C. Practical and Statistical significance
- D. F-test and test of variances of 2 samples

Answer: C

NEW QUESTION 188

One of the foundations of Lean Six Sigma is the concept that the output of a process (Y) is influenced by the process inputs (X's) and is commonly shown as which formula?

- A. $Y = Z(X^2)$
- B. $Y = f(X^3)$
- C. $Y = f(X^n)$
- D. $Y = g(X + 1.5)$

Answer: C

NEW QUESTION 192

Appropriate measures means that measurements are .

- A. Representative
- B. Sufficient
- C. Contextual
- D. Relevant
- E. All of these answers are correct

Answer: E

NEW QUESTION 193

.....

Thank You for Trying Our Product

We offer two products:

1st - We have Practice Tests Software with Actual Exam Questions

2nd - Questions and Answers in PDF Format

ICBB Practice Exam Features:

- * ICBB Questions and Answers Updated Frequently
- * ICBB Practice Questions Verified by Expert Senior Certified Staff
- * ICBB Most Realistic Questions that Guarantee you a Pass on Your First Try
- * ICBB Practice Test Questions in Multiple Choice Formats and Updates for 1 Year

100% Actual & Verified — Instant Download, Please Click
[Order The ICBB Practice Test Here](#)