

# IASSC

## Exam Questions ICBB

IASSC Certified Lean Six Sigma Black Belt



#### NEW QUESTION 1

A Belt has determined that the inventory of repair parts at a rework station can be reduced by 45%. According to Cost of Poor Quality (COPQ) definitions inventory reduction would be considered \_\_\_\_\_.

- A. Soft Savings
- B. COPQ efficiency
- C. Median Savings
- D. Hard Savings

**Answer: D**

#### NEW QUESTION 2

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 3

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 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

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 6

Each of the items listed would impact the Process Capability for a process with a continuous output except \_\_\_\_\_ .

- A. Shape of process data distribution (e.
- B. Normal Distribution)
- C. Process Technology
- D. Process Standard Deviation
- E. Seasonal variation in process

**Answer: B**

#### NEW QUESTION 7

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 8

If you can Poka-Yoke a defect out of the process entirely then you do not need use SPC on the characteristic of interest in the defect.

- A. True
- B. False

**Answer:** A

#### NEW QUESTION 9

A valid Multiple Linear Regression (MLR) is characterized by all of these except?

- A. It is an assumption that the X's (inputs) are not correlated to each other
- B. The X's (inputs) are assumed to be independent of each other
- C. The Residuals from MLR analysis have to be Normally Distributed
- D. MLR is conducted based on a deliberate form of experimentation
- E. It is not possible to evaluate interactions in a MLR analysis

**Answer:** D

#### NEW QUESTION 10

For a batch manufacturing process, while assessing short term process variation, which variation category(ies) should one need to focus on?(Note:There are 2 correct answers).

- A. Variation within consecutive pieces
- B. Variation among consecutive batches
- C. Variation among groups of pieces
- D. Variation among the completed product

**Answer:** AB

#### NEW QUESTION 10

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 11

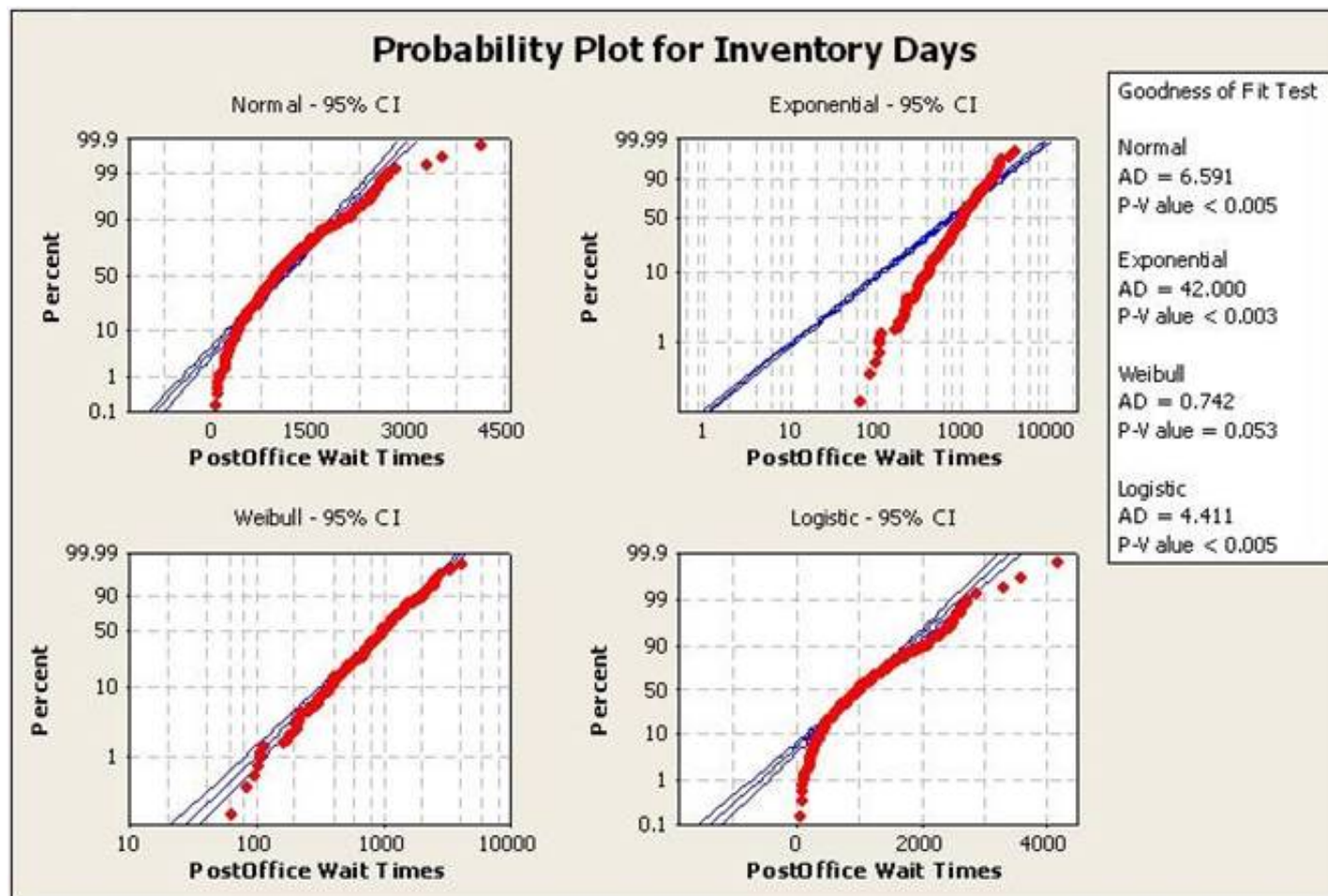
Kanban establishes a means of monitoring production, conveyance and delivery information such that efficient flow is established. The method used by Kanban is to require a \_\_\_\_\_ before anything moves.

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

**Answer:** B

#### NEW QUESTION 13

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 18

Statistical Difference is the magnitude of difference or change required to distinguish between a true difference, brought about by change or improvement, and one that could have occurred by chance.

- A. True
- B. False

**Answer: A**

#### NEW QUESTION 19

Which Experimental Design typically is most associated with the fewest number of input variables or factors in the design?

- A. Fractional Factorial design
- B. Full Factorial design
- C. Simple Linear Regression
- D. Response Surface Design

**Answer: D**

#### NEW QUESTION 24

Using this data calculate the percentage of DPU.

- A. 2.74
- B. 3.23
- C. 4.56
- D. 5.93

**Answer: B**

#### NEW QUESTION 25

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 28

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 32

What dollar amount of savings would a project show if it reduced your outstanding Accounts Receivable by \$0.9 million dollars to \$3.5 million total and your organization's marginal cost of capital was 5.7%?

- A. \$49,250
- B. \$51,300
- C. \$117,500
- D. \$202,424

**Answer:** B

#### NEW QUESTION 33

Which Element of Waste best describes "the unnecessary movement of materials and goods"?

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

**Answer:** D

#### NEW QUESTION 35

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 38

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 41**

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
- E. If we wanted to compare the Central Tendencies of all three samples we could use the Mann-Whitney test

**Answer:** BD

**NEW QUESTION 42**

Fractional Factorial, \_\_\_\_\_ and Response Surface Method are types of planned experiments.

- A. Multi-Vari Analysis
- B. Baldrige Channels
- C. One Factor at a Time or OFAT
- D. Factorial Design

**Answer:** D

**NEW QUESTION 43**

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 44**

An example of the waste of mismanaged Inventory is \_\_\_\_\_.

- A. Capital costs of money
- B. Value decrease from aged inventory
- C. Cost of storage space
- D. All of these answers are correct

**Answer:** D

**NEW QUESTION 46**

A valid mathematical Regression represents all of the characteristics shown except \_\_\_\_\_.

- A. All of the standardized residuals will be within  $\pm 3$  Standard Deviations
- B. The sum of the residuals is zero
- C. The residuals when plotted follow a Normal Distribution
- D. Most standardized residuals are within  $\pm 2$  Standard Deviations
- E. The Residual is equal to the difference between the observed and predicted values

**Answer:** A

**NEW QUESTION 48**

In a Fishbone Diagram the 6M's stand for Methods, Measurements, Machine, Man, Mother Nature and \_\_\_\_\_.

- A. Management



- B. Merger
- C. Materials
- D. Medical

**Answer:** C

**NEW QUESTION 51**

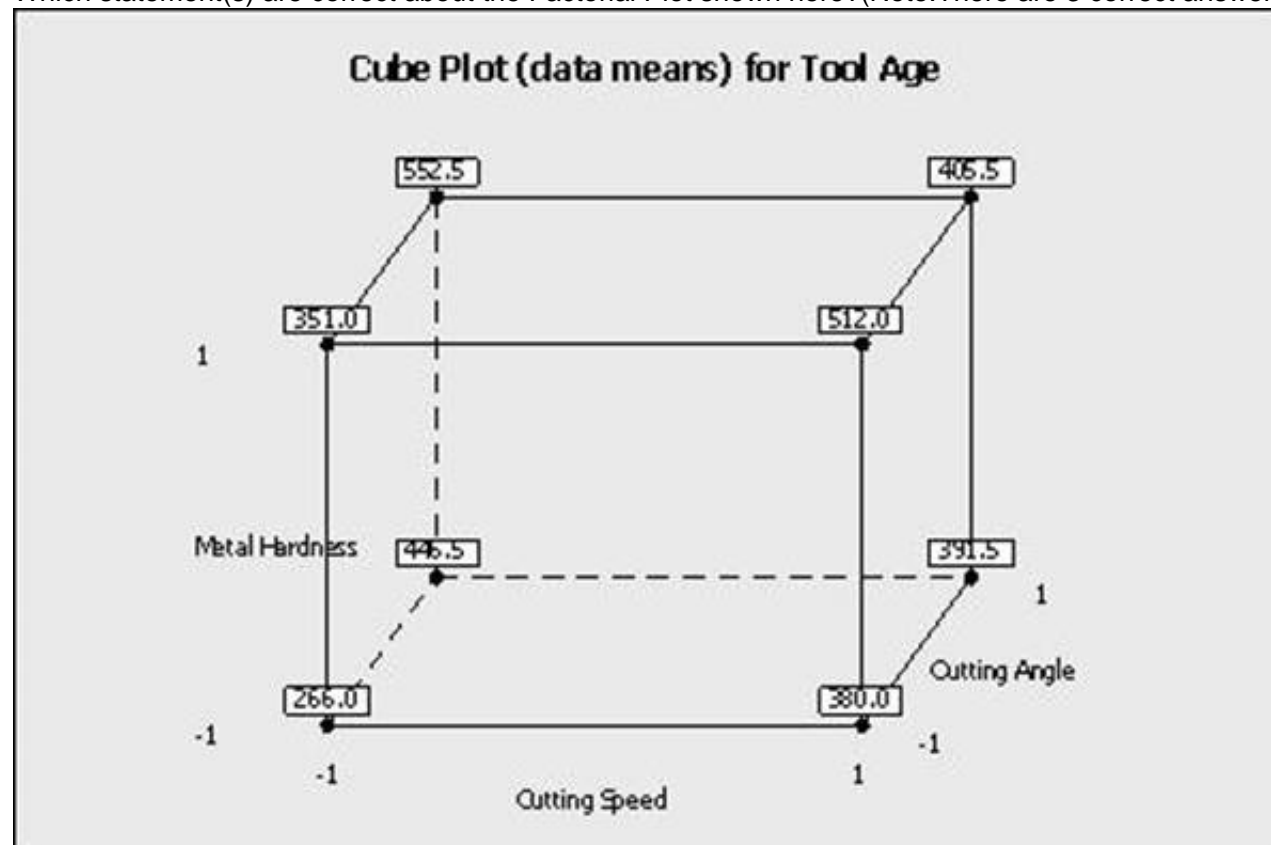
The Japanese born function of a Kanban event utilizes a specific, step-by-step approach meant to bring about major changes to a process.

- A. True
- B. False

**Answer:** B

**NEW QUESTION 55**

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 59**

Situations where standardized work needs to be incorporated include all of these except \_\_\_\_\_.

- A. Machines continually operating to reduce the labor cost per piece
- B. Lack of a system to assure proper inventory levels at repair stations
- C. Changeover instructions incomplete
- D. Process flow for the same product assembly taking various cycle time for completion

**Answer:** A

**NEW QUESTION 61**

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

- A. Child's height is 4 foot 3 inches
- B. Three employees wore hard hats
- C. Car burned 2.7 gallons of gasoline
- D. Train was going 140 kilometers per hour

**Answer:** B

**NEW QUESTION 63**

If a Six Sigma project was to reduce repair station inventory and the team found the inventory was creeping up over time which Lean tools should be considered in the Control Phase to reestablish and sustain the project success?

- A. Review the Visual Factory to assure inventory in excess of desired visible
- B. Improve the lighting to assure adequate visibility
- C. Analyze data from supplier deliveries

D. Reword the standardized work instructions to use active verbs and not passive phrases

**Answer:** A

**NEW QUESTION 67**

A(n) \_\_\_\_\_ has occurred when two inputs have a greater impact on a change in the output than either of the inputs has by itself.

- A. Dependency
- B. Bimodal reaction
- C. Interaction
- D. Amplified effect

**Answer:** C

**NEW QUESTION 69**

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 72**

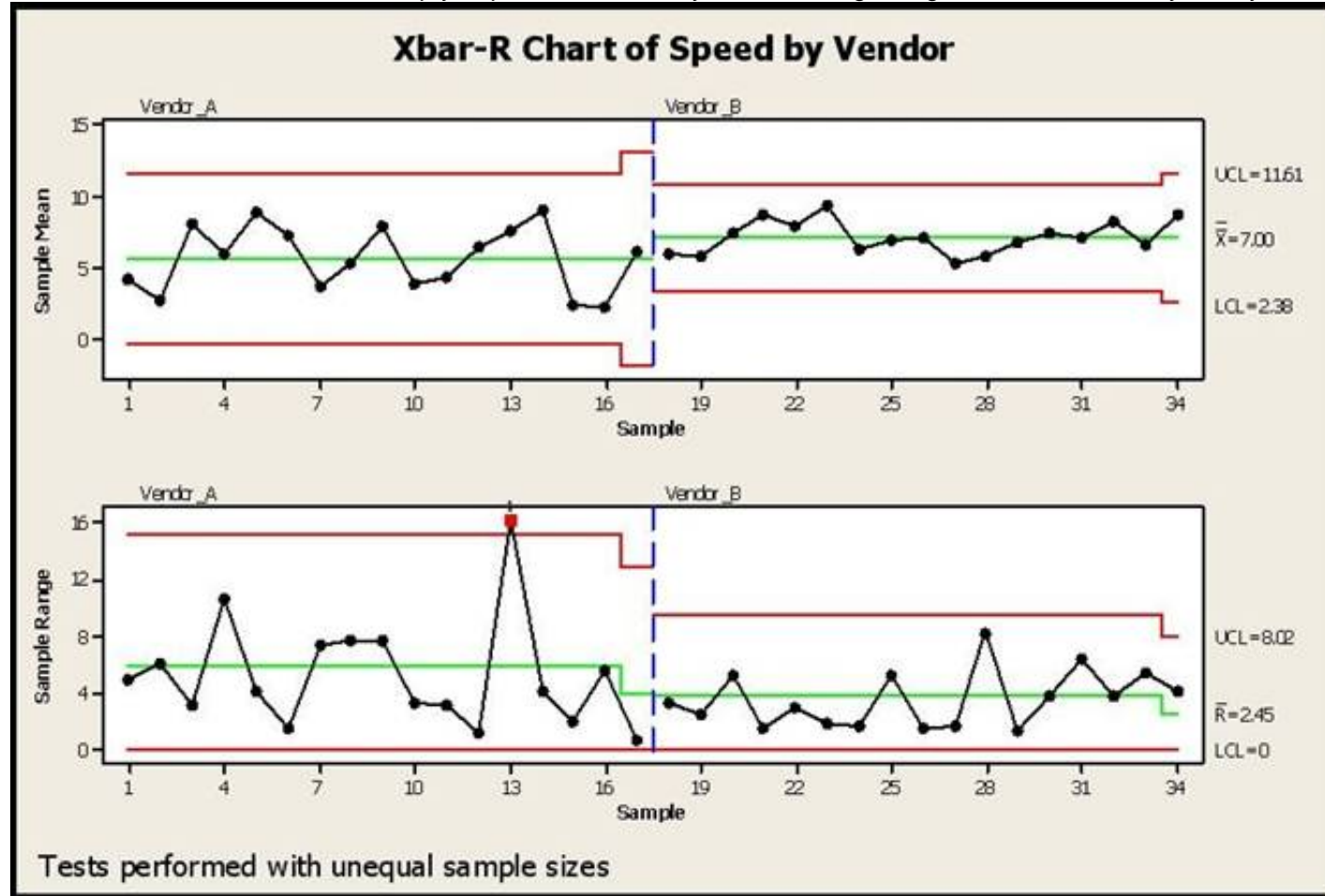
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- C. Coefficient of Determination is less than  $r^2$
- D. Correlation Coefficient equals  $r$  divided by 2

**Answer:** A

**NEW QUESTION 76**

SPC Charts are used extensively in different business and decision-making environments. In this example a vendor is being selected based on speed of delivery. Which of the conclusions would help you pick a vendor for your needs regarding lead-time of delivery from your vendors?(Note:There are 4 correct answers).



- A. Vendor A with a much shorter lead time in delivery
- B. Vendor B as it has a better consistency (lower variance) on lead time
- C. Vendor B as Vendor A shows a situation out of control as shown in red
- D. Vendor B as the Control Limits are much narrower than Vendor A
- E. Vendor B with higher lead time, but a process with much narrower Control Limits

**Answer:** BCDE

**NEW QUESTION 77**

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 \$2,800 in order to



stay within budget. Using a sample of 55 first article components, a Mean of the new product upgrade price of \$2,240 and a Standard Deviation of \$120 was estimated. Based on the data provided, the Z value for the data assuming a Normal Distribution is?

- A. 2.33
- B. 4.67
- C. 6.48
- D. 8.28

**Answer:** B

#### NEW QUESTION 81

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 86

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

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

**Answer:** C

#### NEW QUESTION 87

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 89

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

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 97

For a Normal Distribution as samples size increases the Range in Mean and Standard Deviation decrease relative to the Mean and Standard Deviation of the population.

- A. True
- B. False

**Answer:** A

#### NEW QUESTION 100

One of the methods of testing a Measurement System is to have at least two people take multiple readings from the same instrument and of the same sample set to judge the Repeatability and Reproducibly. This approach is called a \_\_\_\_\_ study.

- A. Correlation Analysis
- B. Gage R & R
- C. Bimodal
- D. Dual Attribute

Answer: B

#### NEW QUESTION 105

Relative to a Design of Experiments the term Collinear refers to variables being a \_\_\_\_\_ of each other.

- A. Linear combination
- B. Directly parallel
- C. Mirror image
- D. None of the above

Answer: A

#### NEW QUESTION 106

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 109

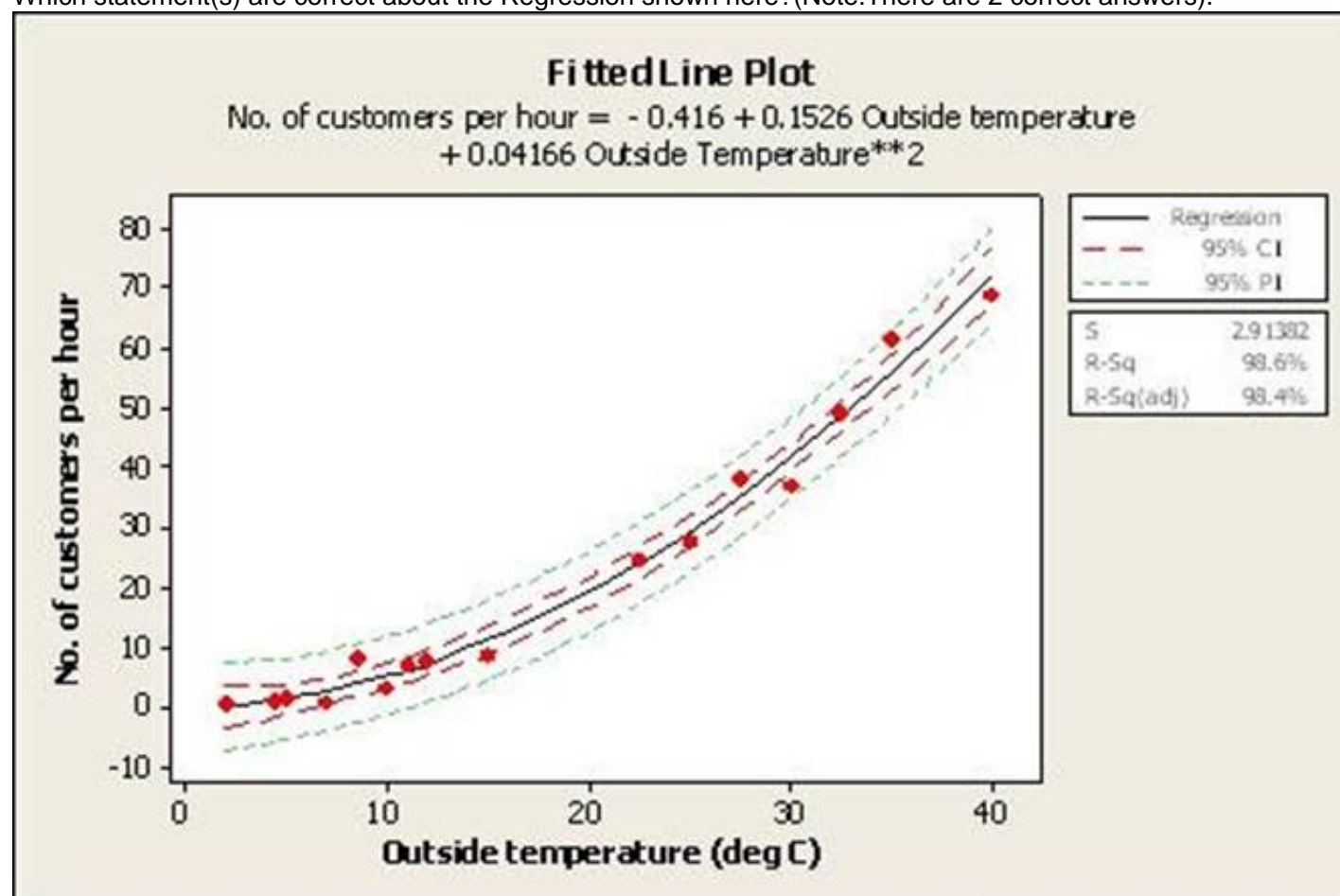
What aspects of Measurement Systems Analysis (MSA) studies are applicable when the process used to measure does not damage the part?

- A. Destructive variable gage R&R and Crossed Study
- B. Destructive variable gage R&R and Nested Study
- C. Nondestructive variable gage R&R and Crossed Study
- D. Nondestructive variable gage R&R and Nested Study

Answer: D

#### 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 113

Following process modifications, the Null Hypothesis states that no improvement to the process has occurred. If we discover the Null Hypothesis Test was rejected when it was false that would be a(n) \_\_\_\_\_.

- A. Type I Error
- B. Type II Error
- C. Type III Error
- D. Alpha Error

**Answer:** B

#### NEW QUESTION 116

How many experimental runs exist in a Full Factorial and fully randomized design for 5 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. 128
- C. 256
- D. 64

**Answer:** D

#### NEW QUESTION 117

As a means of measuring the effects on other areas of a process as a result of changes in the primary metric we also define and track \_\_\_\_\_.

- A. Parallel process metrics
- B. Secondary metrics
- C. Tertiary metrics
- D. Industry standards

**Answer:** B

#### NEW QUESTION 120

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

##### 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 air-fuel ratio explains most of the TurbineOutput variation
- B. The Regression explains over 98% of the process variation
- C. This Multiple Linear Regression has three statistically significant independent variables
- D. If the air-fuel ratio increases by 1, the TurbineOutput more than triples
- E. The SteamExitTemp explains the most variation of the TurbineOutput

**Answer:** DE

#### NEW QUESTION 121

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. For the sales accomplished above, what test would validate if they met their requirements?

- A. F Test
- B. Test for Equal Variance
- C. Chi Square Test
- D. One-Sample t-Test

**Answer:** D

#### NEW QUESTION 125

Special Cause Variation falls into which two categories?(Note:There are 2 correct answers).

- A. Natural
- B. Short term
- C. Assignable
- D. Pattern

**Answer:** CD

#### NEW QUESTION 126

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 129

Which Experimental Design typically is most associated with the fewest number of input variables or factors in the design?

- A. Response Surface design
- B. Full Factorial design
- C. Simple Linear Regression
- D. Fractional Factorial design

**Answer:** A

#### NEW QUESTION 133

A statistical test or Hypothesis Test is performed to reject or fail to reject a stated hypothesis and it converts the Practical Problem into a Statistical Problem.

- A. True
- B. False

**Answer:** A

#### NEW QUESTION 137

A fundamental rule is that both Standard Deviation and Variance can be added.

- A. True
- B. False

**Answer:** B

#### NEW QUESTION 139

The Greek letter “sigma” is used by mathematicians to signify \_\_\_\_\_.

- A. Curve Width
- B. Numerical Average
- C. Standard Deviation
- D. Data Spread

**Answer:** C

#### NEW QUESTION 143

A natural logarithmic base is not required for which of these distributions for probability calculations?

- A. Weibull
- B. Normal
- C. Poisson
- D. Binomial

**Answer:** D

**NEW QUESTION 144**

For the data set shown here which of these statements is/are true?

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. Hypothesis Testing of Means or Medians cannot be done since there are an unequal number of observations for the 3 samples
- B. A Paired T-test would be applicable for comparing Grade B and Grade A since they follow each other in the data set
- C. Grade A has the lowest sample Mean of the 3 samples
- D. Grade A has a higher sample Mean than Grade B

**Answer:** C

**NEW QUESTION 146**

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 147**

For Attribute Data, Process Capability is defined as the average proportion of nonconforming products.

- A. True
- B. False

**Answer:** A

**NEW QUESTION 152**

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 156**

The relationship between a response variable and one or more independent variables is investigated and modeled by use of \_\_\_\_\_.

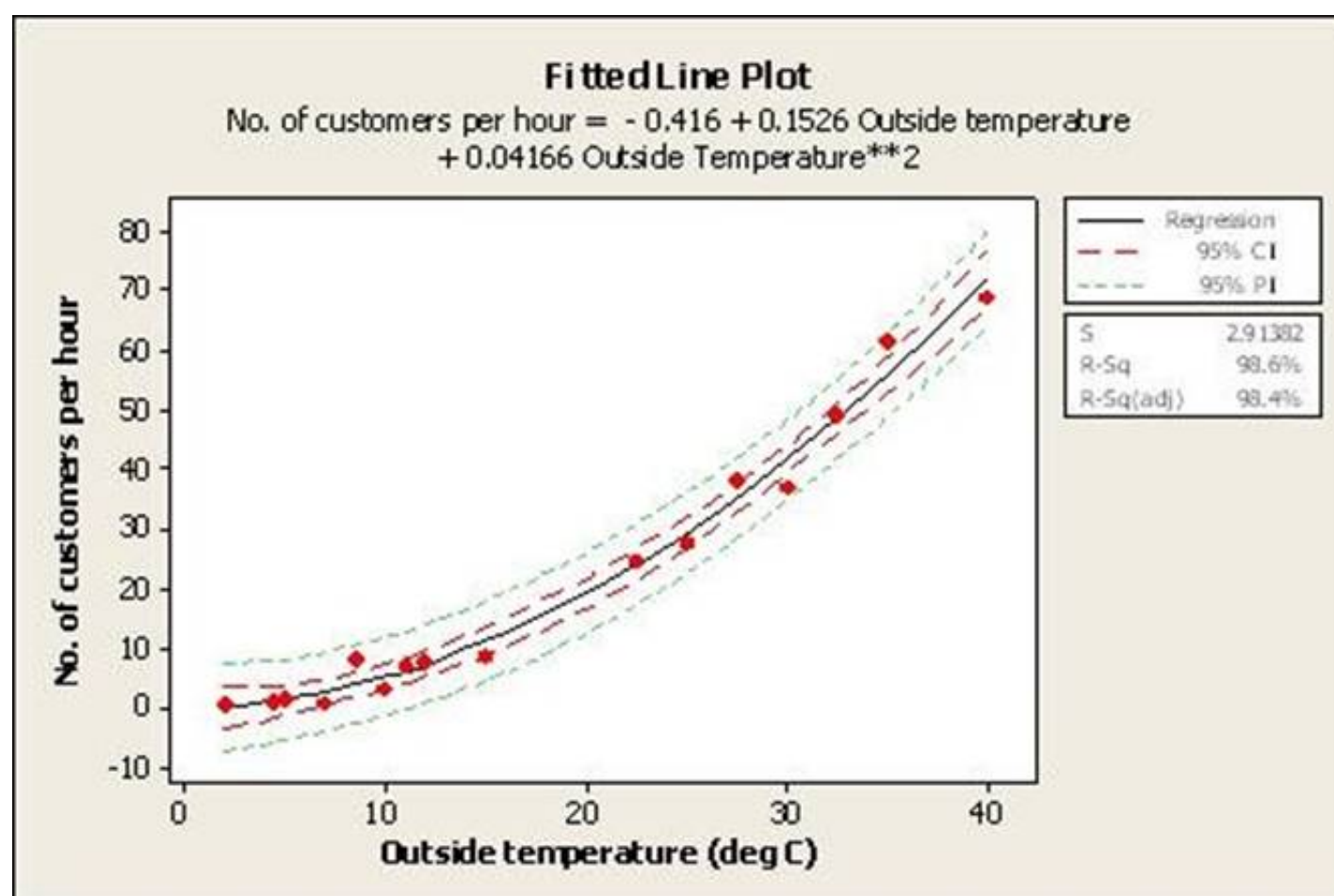
- A. X-Y Matrix
- B. Baldrige Assessment
- C. Analysis of Variance (ANOVA)
- D. Critical X's Definition

**Answer:** C

**NEW QUESTION 158**

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 161

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 164

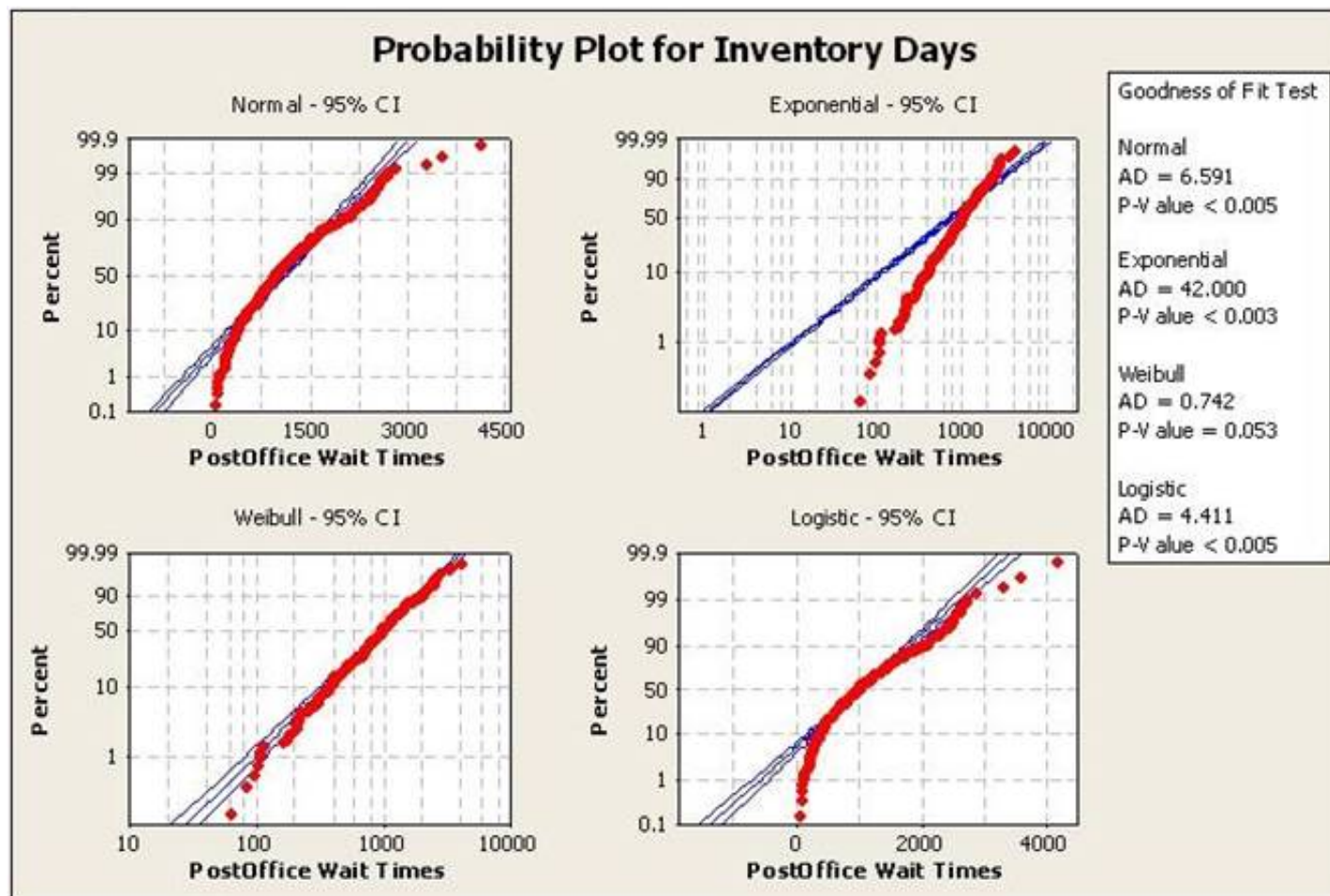
Two of the key deliverables for the Measure Phase are a robust description of the process and its flow and an assessment of the Measurement System.

- A. True
- B. False

**Answer:** A

#### NEW QUESTION 167

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 168

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?

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**Answer: E**

#### NEW QUESTION 171

What aspects of Measurement Systems Analysis (MSA) studies are applicable when the process used to measure does not damage the part?

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- B. Destructive variable gage R&R and Nested Study
- C. Nondestructive variable gage R&R and Crossed Study
- D. Nondestructive variable gage R&R and Nested Study

**Answer: D**

#### NEW QUESTION 172

To establish a sample size that will allow the proper overlap of distributions we do which of these?

- A. Multiply Alpha by 1.75
- B. Calculate one minus Beta
- C. Calculate Beta plus 2
- D. Multiply Beta by 3

**Answer: B**

#### NEW QUESTION 174

A fundamental rule is that both Standard Deviation and Variance can be added.

- A. True
- B. False

**Answer: B**

**NEW QUESTION 177**

The reported Cpk for a process with an average of 104 units, a spread of 18 units and upper and lower specification limits of 122 and 96 units would be?

- A. 0.5
- B. 0.89
- C. 1.00
- D. 2.00

**Answer: B**

**NEW QUESTION 180**

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 183**

One of the primary deliverables from performing a SIPOC is to begin to understand which outputs have the greatest affect on the customer most valued inputs.

- A. True
- B. False

**Answer: B**

**NEW QUESTION 184**

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. In order to increase the Long Term Z value to 4, what is the maximum long term variation in pricing the Belt can accept for his upgraded critical raw material component?

- A. \$20
- B. \$35
- C. \$70
- D. \$110

**Answer: B**

**NEW QUESTION 187**

For a Normal Distribution as samples size increases the Range in Mean and Standard Deviation decrease relative to the Mean and Standard Deviation of the population.

- A. True
- B. False

**Answer: A**

**NEW QUESTION 188**

The two types of data that can be used in Statistical Analysis are Attribute and Variable.

- A. True
- B. False

**Answer: A**

**NEW QUESTION 190**

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