

Exam Questions CSSBB

Certified Six Sigma Black Belt

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NEW QUESTION 1

- (Topic 1)

Find the value of (8) in the ANOVA table. Assume:

$$\alpha = 0.10$$

ANOVA Table						
Source	SS	df	MS	F ratio	F crit	P-value
x	1.48	1	(1)	(2)	(3)	(4)
Y	18.6	1	(5)	(6)	(7)	(8)
xxY	12.2	1	(9)	(10)	(11)	(12)
Error	2.1	4	(13)			

- A. 16.4
- B. 3.2
- C. 18.6
- D. 23.2
- E. 4.54
- F. 12.2
- G. 0.525
- H. 2.82
- I. 1.48
- J. 35.4
- K. $0.10 < P < 1$
- L. $0.05 < P < 0.10$
- M. $0.01 < P < 0.05$
- N. $0.005 < P < 0.01$
- O. $0 < P < 0.005$

Answer: O

NEW QUESTION 2

- (Topic 1)

Run #	A	B	Ave. Response
1	–	–	129
2	–	+	133
3	+	–	86
4	+	+	80

This experimental design is an example of:

- A. full factorial
- B. half fractional factorial
- C. fractional factorial
- D. ANOVA design

Answer: A

NEW QUESTION 3

- (Topic 1)

The median is a better choice than the mean for a measure of central tendency if the data:

- A. is bimodal
- B. often has outliers
- C. is normally distributed
- D. is exponentially distributed

Answer: B

NEW QUESTION 4

- (Topic 1)

A team has been asked to reduce the cycle time for a process. The team decides to collect baseline data. It will do this by:

- A. seeking ideas for improvement from all stakeholders
- B. researching cycle times for similar processes within the organization
- C. obtaining accurate cycle times for the process as it currently runs
- D. benchmarking similar processes outside the organization

Answer: C

NEW QUESTION 5

- (Topic 1)

The preferred method for determining statistically whether factor A or B is significant requires what additional information?

Run #	A	B	Ave. Response
1	–	–	129
2	–	+	133
3	+	–	86
4	+	+	80

- A. value of noise factors
- B. values of responses in replicate runs
- C. number of repetitions
- D. ambient conditions during the experiment
- E. blocking pattern

Answer: B

NEW QUESTION 6

- (Topic 1)

A management team lists nine goals across the top of a rectangle and 15 activity initiatives along the left hand side of the rectangle. If one of the activities strongly supports one of the goals a circle is placed in the box where that activity's row intersects the goal's column. If the activity's support is very strong a "bulls eye" is placed in the box and if the support is weak a triangle is used. This best describes which problem solving tool?

	Goal #1	Goal #2	Goal #3 . . .
Activity #1	⊙		
Activity #1		Δ	○
Activity #1	○	⊙	
etc.			

- A. Affinity diagram
- B. Inter-relationship digraph
- C. Tree diagram
- D. Process decision program chart
- E. Matrix diagram
- F. Prioritization matrix
- G. Activity network diagram

Answer: E

NEW QUESTION 7

- (Topic 1)

A population of size 1,000,000 has mean 42 and standard deviation 6. Sixty random samples, each of size 15 are selected. According to the Central Limit Theorem the distribution of the sixty sample means has a standard deviation of approximately:

- A. 6
- B. 6/42
- C. 6/15
- D. 6/ 15
- E. none of the above

Answer: D

NEW QUESTION 8

- (Topic 1)

A random sample of 2500 printed brochures is found to have a total of three ink splotches. The rate of ink splotches in PPM is:

- A. $1,000,000 \div 2500 \times 3$
- B. $2500 \div 1,000,000 \times 3$
- C. $3 \div 2500 \times 1,000,000$
- D. $3 \times 2500 \div 1,000,000$

Answer: C

NEW QUESTION 9

- (Topic 1)

The team in the above problem draws arrows from Post-It® notes that are causes to notes that are the effects of these causes. This step is best described by which approach to problem solving?

- A. Affinity diagram
- B. Inter-relationship digraph
- C. Tree diagram
- D. Process decision program chart
- E. Matrix diagram
- F. Prioritization matrix
- G. Activity network diagram

Answer: B

NEW QUESTION 10

- (Topic 1)

A team wants a technique for doing an initial study of a process that not every team member is familiar with. They should use:

- A. written and diagrammed work instructions
- B. flow charts and process maps
- C. cause and effect diagrams
- D. Pareto chart
- E. relationship matrix

Answer: B

NEW QUESTION 10

- (Topic 1)

A team is investigating ways to reduce power outages. They determine that an outage can occur in only three ways: grid failure, local transformer failure or local overload. They then investigate each of these three events for possible causes, etc. They draw a diagram that “fans out” using the power outage as the handle of the fan. These improvements are best described by which approach to problem solving?

- A. Affinity diagram
- B. Inter-relationship digraph
- C. Tree diagram
- D. Process decision program chart
- E. Matrix diagram
- F. Prioritization matrix
- G. Activity network diagram

Answer: C

NEW QUESTION 11

- (Topic 1)

A team wants a technique for improving consistency of assembly operations. They should use:

- A. written and diagrammed work instructions
- B. flow charts and process maps
- C. cause and effect diagrams
- D. Pareto chart
- E. relationship matrix

Answer: A

NEW QUESTION 15

- (Topic 1)

The following data were collected on the diameters of turned shafts: 2.506 2.508 2.505 2.505. These values are: I. Attribute data II. Discrete data III. Variables data IV. Continuous data

- A. I and II A stable, normally distributed process with specification 3.50 .03 has $\sigma = .016$. What percent of the production violates specification?
- B. I only
- C. II only
- D. I and IV
- E. III and IV

Answer: E

NEW QUESTION 17

- (Topic 1)

	size			
	.500	.625	.750	.875
Nut	146	300	74	41
Washer	280	276	29	32
Bolt	160	214	85	55

This table displays the inventory of fasteners in a storage cabinet. An item is selected at random from the fastener cabinet. Find the approximate probability it is larger than 1/2.

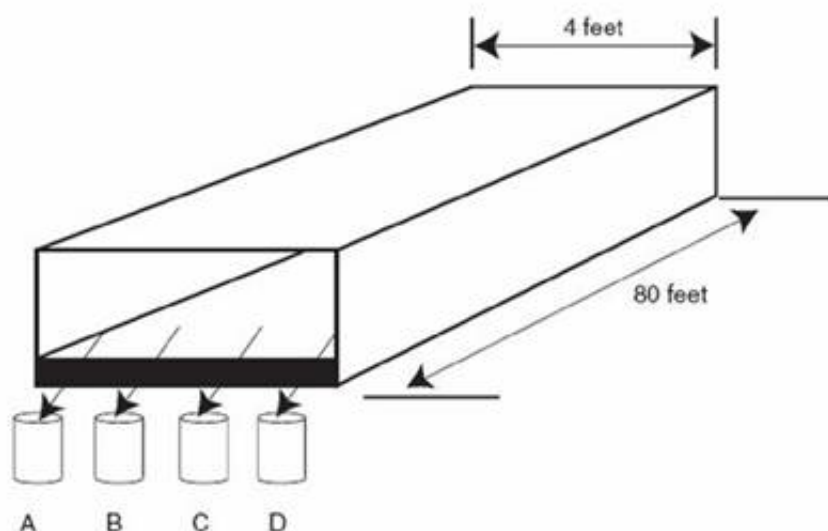
- A. .35
- B. .65
- C. .1106
- D. .47
- E. none of the above

Answer: B

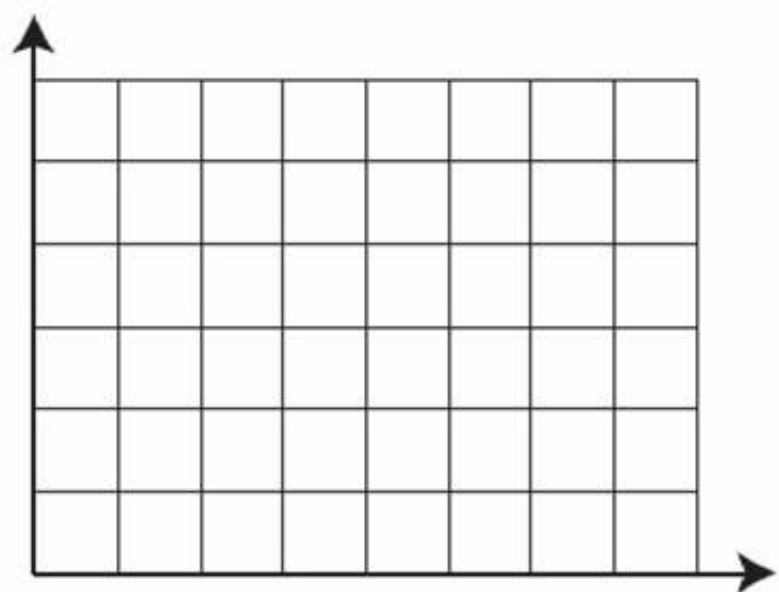
NEW QUESTION 20

- (Topic 1)

SCENARIO A Six Sigma team is measuring the moisture content of corn starch as it leaves the conveyer belt of a dryer. They collect one sample four cups of starch at times indicated in the chart at fixed locations labeled A, B, C, and D across the end of the belt. See the diagram below.



Find the equation of the regression line for these sample data points: (1, 7) (3, 3) (3, 2) (5, −1)



- A. $y = 10.8 - 2.9x$
- B. $y = 12.9 + 5.2x$
- C. $y = 16 - 3.7x$
- D. $y = 8.75 - 2x$
- E. $y = 22.6 - 4.8x$

Answer: D

NEW QUESTION 22

- (Topic 1)

The quality leader responsible for the term Total Quality Management (TQM):

- A. Juran
- B. Ishikawa
- C. Crosby
- D. Feigenbaum
- E. Taguchi
- F. none of the above

Answer: D

NEW QUESTION 26

- (Topic 1)

Find the value of (4) in the ANOVA table. Assume:

$$\alpha = 0.10:$$

ANOVA Table

Source	SS	df	MS	F ratio	F crit	P-value
x	1.48	1	(1)	(2)	(3)	(4)
Y	18.6	1	(5)	(6)	(7)	(8)
xxY	12.2	1	(9)	(10)	(11)	(12)
Error	2.1	4	(13)			

- A. 16.4
- B. 3.2
- C. 18.6
- D. 23.2
- E. 4.54
- F. 12.2
- G. 0.525
- H. 2.82
- I. 1.48
- J. 35.4
- K. $0.10 < P < 1$
- L. $0.05 < P < 0.10$
- M. $0.01 < P < 0.05$
- N. $0.005 < P < 0.01$
- O. $0 < P < 0.005$

Answer: K

NEW QUESTION 31

- (Topic 1)

SWOT is an acronym for:

- A. strengths, weaknesses, opportunities, threats
- B. statistics without tables
- C. sensory Weibull ordinal tools
- D. success wields optimal teams
- E. none of the above

Answer: A

NEW QUESTION 36

- (Topic 1)

An experiment has seven factors with two levels each. The experiment has eight runs. This experimental design is called:

- A. full factorial design
- B. half fractional factorial design
- C. interaction
- D. none of the above

Answer: D

NEW QUESTION 38

- (Topic 1)

When comparing two vendors' machines it is found that a sample of 1000 parts from machine A has 23 defectives and a sample of 1300 parts from machine B has 36 defectives. Do the data indicate that machine B has a higher rate of defectives?

- A. yes
- B. no
- C. all of the above

Answer: A

NEW QUESTION 43

- (Topic 1)

Intuitively, which factor A or B seems most likely to be significant?

Run #	A	B	Ave. Response
1	–	–	129
2	–	+	133
3	+	–	86
4	+	+	80

- A. A
- B. B
- C. C
- D. neither
- E. both about equally significant

Answer: A

NEW QUESTION 48

- (Topic 1)

A team wants a technique for obtaining a large number of possible reasons for excess variation in a dimension. They should use:

- A. written and diagrammed work instructions
- B. flow charts and process maps
- C. cause and effect diagrams
- D. Pareto chart
- E. relationship matrix

Answer: C

NEW QUESTION 49

- (Topic 1)

If the probability that event A occurs is 0.51, the probability that event B occurs is 0.64 and that probability that both A and B occur is 0.23 then:

- A. events A and B are complementary
- B. events A and B are mutually exclusive
- C. events A and B are supplementary
- D. events A and B are not mutually exclusive
- E. events A and B are statistically independent

Answer: D

NEW QUESTION 53

- (Topic 1)

An automatic gaging system is to be installed in a process. The gage will insert data values into a data base from which machine adjustments will be made automatically. A critical factor in specifying the equipment is:

- A. communication link between gage and computer
- B. compatibility of software in the gage and in the computer
- C. adequate manual over-rides
- D. all of the above

Answer: D

NEW QUESTION 55

- (Topic 1)

= 0.05 The average weight of castings produced at the Nebraska foundry is 3.7 lbs. A new supplier from Kansas has submitted a batch of castings known to have normally distributed weights. A random sample of 10 has an average weight of 3.6 lbs. and standard deviation 0.06 lbs. Do these data indicate that the Kansas foundry produce lighter castings on average?

- A. yes
- B. no

Answer: A

NEW QUESTION 59

- (Topic 1)

$P(A) = .42$, $P(B) = .58$, $P(A \& B) = .10$. Are A and B (statistically) independent?

- A. yes
- B. no

Answer: B

NEW QUESTION 62

- (Topic 1)

$P(A) = .42$, $P(B) = .58$, $P(A \& B) = .10$ Find $P(A \text{ or } B)$.

- A. .90
- B. 1.00
- C. .24
- D. none of the above

Answer: A

NEW QUESTION 64

- (Topic 1)

Find the value of (3) in the ANOVA table. Assume:

$$\alpha = 0.10$$

ANOVA Table						
Source	SS	df	MS	F ratio	F crit	P-value
x	1.48	1	(1)	(2)	(3)	(4)
Y	18.6	1	(5)	(6)	(7)	(8)
xxY	12.2	1	(9)	(10)	(11)	(12)
Error	2.1	4	(13)			

- A. 16.4
- B. 3.2
- C. 18.6
- D. 23.2
- E. 4.54
- F. 12.2
- G. 0.525
- H. 2.82
- I. 1.48
- J. 35.4
- K. $0.10 < P < 1$
- L. $0.05 < P < 0.10$
- M. $0.01 < P < 0.05$
- N. $0.005 < P < 0.01$
- O. $0 < P < 0.005$

Answer: E

NEW QUESTION 69

- (Topic 1)

A medicine with efficacy of .52 is given to five patients. Find the approximate probability that at least one of the patients is cured. (Hint: Use the binomial formula.)

- A. .975
- B. .480
- C. .531
- D. .416
- E. none of the above

Answer: A

NEW QUESTION 71

- (Topic 1)

The Toronto plant produces appliances in the following distribution: Type A 23% Type B 42% Type C 35% A random sample of 300 appliances from the Texas plant has the following distribution: Type A 73 Type B 111 Type C 116 Is the distribution of appliances at the Texas plant the same as that at the Toronto plant?

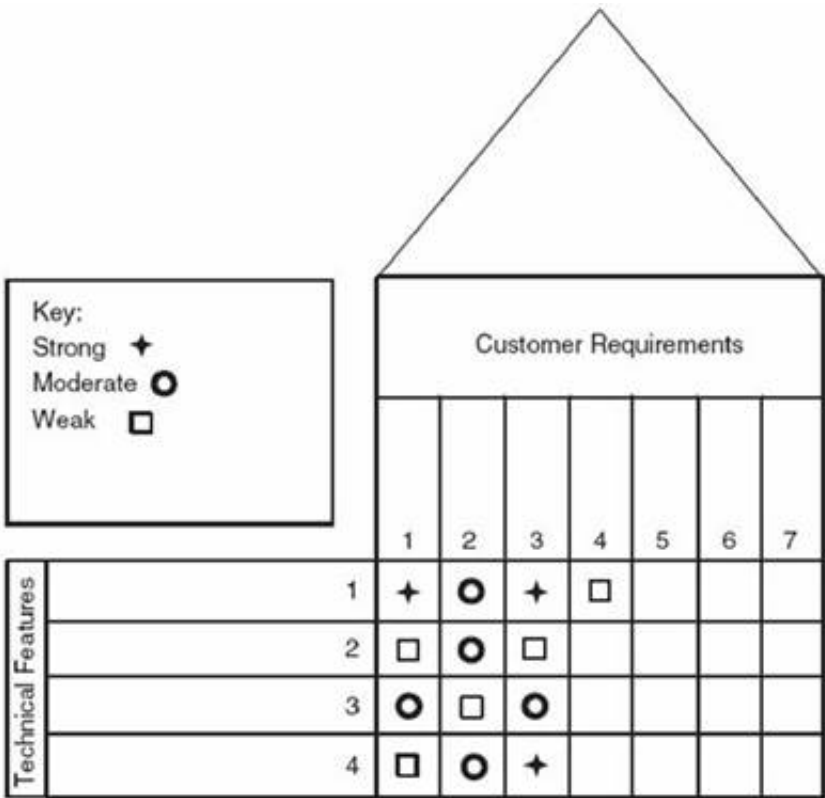
- A. yes
- B. no

Answer: B

NEW QUESTION 75

- (Topic 1)

Customer requirement #3 has a _____ relationship with technical feature #3.



- A. strong
- B. moderate
- C. weak

Answer: B

NEW QUESTION 77

- (Topic 1)
If DPU = 0.022, the RTU is approximately:

- A. 0.022
- B. 0.078
- C. 0.0022
- D. 0.98
- E. 0.098
- F. 0.0098

Answer: D

NEW QUESTION 79

- (Topic 1)
An engineer wants to try two hardening ovens to see whether they have different hardness scores. She cuts 8 pieces of bar stock in half, putting half of each in oven A and the other half in oven B. The following data are collected: Do the data indicate that the ovens have different average scores? Assume differences are normally distributed.

Piece #	1	2	3	4	5	6	7	8
Oven A	20.3	19.7	21.4	22.0	21.6	21.0	20.8	20.8
Oven B	19.7	20.0	20.1	21.2	21.4	20.7	21.0	19.6

- A. yes
- B. no

Answer: B

NEW QUESTION 80

- (Topic 1)
Find the value of (5) in the ANOVA table. Assume:

$\alpha = 0.10$

ANOVA Table

Source	SS	df	MS	F ratio	F crit	P-value
x	1.48	1	(1)	(2)	(3)	(4)
Y	18.6	1	(5)	(6)	(7)	(8)
xxY	12.2	1	(9)	(10)	(11)	(12)
Error	2.1	4	(13)			

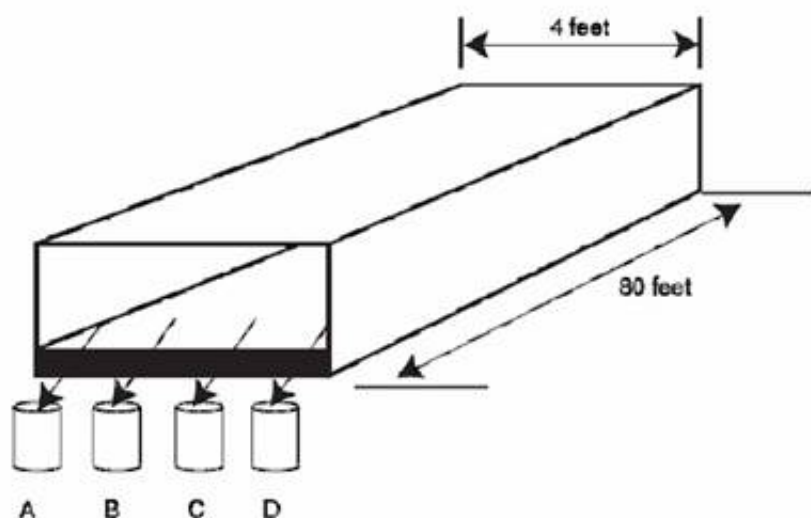
- A. 16.4
- B. 3.2
- C. 18.6
- D. 23.2
- E. 4.54
- F. 12.2
- G. 0.525
- H. 2.82
- I. 1.48
- J. 35.4
- K. $0.10 < P < 1$
- L. $0.05 < P < 0.10$
- M. $0.01 < P < 0.05$
- N. $0.005 < P < 0.01$
- O. $0 < P < 0.005$

Answer: C

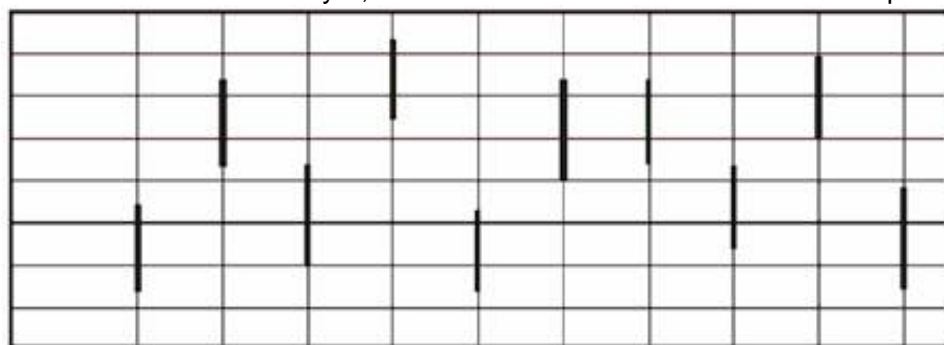
NEW QUESTION 82

- (Topic 1)

SCENARIO A Six Sigma team is measuring the moisture content of corn starch as it leaves the conveyer belt of a dryer. They collect one sample four cups of starch at times indicated in the chart at fixed locations labeled A, B, C, and D across the end of the belt. See the diagram below.



After some work on the dryer, additional data are collected which when plotted looks like this:



Which type of variation dominates?

- A. within sample
- B. sample to sample within the hour
- C. hour to hour
- D. none of the above

Answer: B

NEW QUESTION 83

- (Topic 1)

According to the Central Limit Theorem:

- A. the median and the mean have the same value in a symmetric distribution
- B. the mode of a normal distribution is also the mean
- C. the mean of an exponential distribution is smaller than the median
- D. the mean, median and mode of a normal distribution all have the same value
- E. none of the above

Answer: E

NEW QUESTION 84

- (Topic 1)

There are 14 different defects that can occur on a completed time card. The payroll department collects 328 cards and finds a total of 87 defects. DPMO =:

- A. $87 \div 328$
- B. $87 \div (328 \times 14)$
- C. $14 \div 87$
- D. $87 \div 14 \times 1,000,000$
- E. $328 \div 87$
- F. $87 \times 1,000,000 \div (14 \times 328)$

Answer: F

NEW QUESTION 89

- (Topic 1)
Find Cp and Cpk.

- A. 1.21 and .85
- B. .85 and 1.21
- C. .35 and .63
- D. .63 and .42
- E. none of the above

Answer: D

NEW QUESTION 94

- (Topic 1)
 $P(A) = .42$, $P(B) = .58$ $P(A \& B) = .10$. Are A and B mutually exclusive (or disjoint)?

- A. yes
- B. no

Answer: B

NEW QUESTION 95

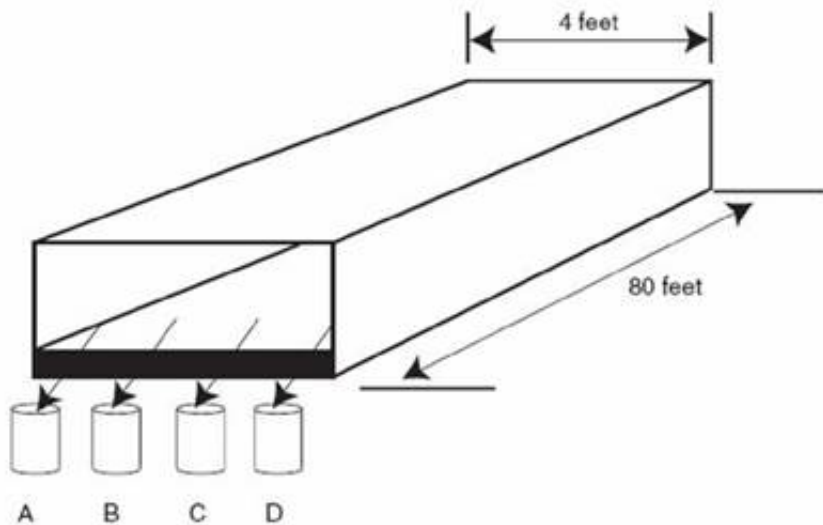
- (Topic 1)
The support for an important quality initiative was lacking in congress until Reagan’s Secretary of Commerce was killed in a horseback riding accident in 1987. That initiative was:

- A. assigning National Institute for Standards and Technology (NIST) quality oversight duties
- B. “consensus of the House” proclamation for Deming’s 14 points
- C. changing National Bureau of Standards to NIST.
- D. authorizing the American National Standards Institute (ANSI) to join with the International Standards Organization (ISO) to promulgate standards.
- E. none of the above.

Answer: E

NEW QUESTION 100

- (Topic 1)
SCENARIO A Six Sigma team is measuring the moisture content of corn starch as it leaves the conveyer belt of a dryer. They collect one sample four cups of starch at times indicated in the chart at fixed locations labeled A, B, C, and D across the end of the belt. See the diagram below.



The data for a nine hour period are:

% moisture										
	12:00	12:10	12:20	4:00	4:10	4:20	8:00	8:10	8:20	8:40
A	12.0	14.2	12.9	14.1	12.5	13.8	14.4	13.0	14.2	14.3
B	15.0	15.2	15.6	15.0	13.8	15.4	15.8	16.0	15.2	15.3
C	12.3	14.8	13.2	13.2	14.9	14.0	14.5	15.3	14.0	16.0
D	12.6	12.2	14.0	12.6	13.0	14.0	13.1	14.8	13.8	12.9

Which type of variation dominates? (Hint: Plot the points on the graph above.)

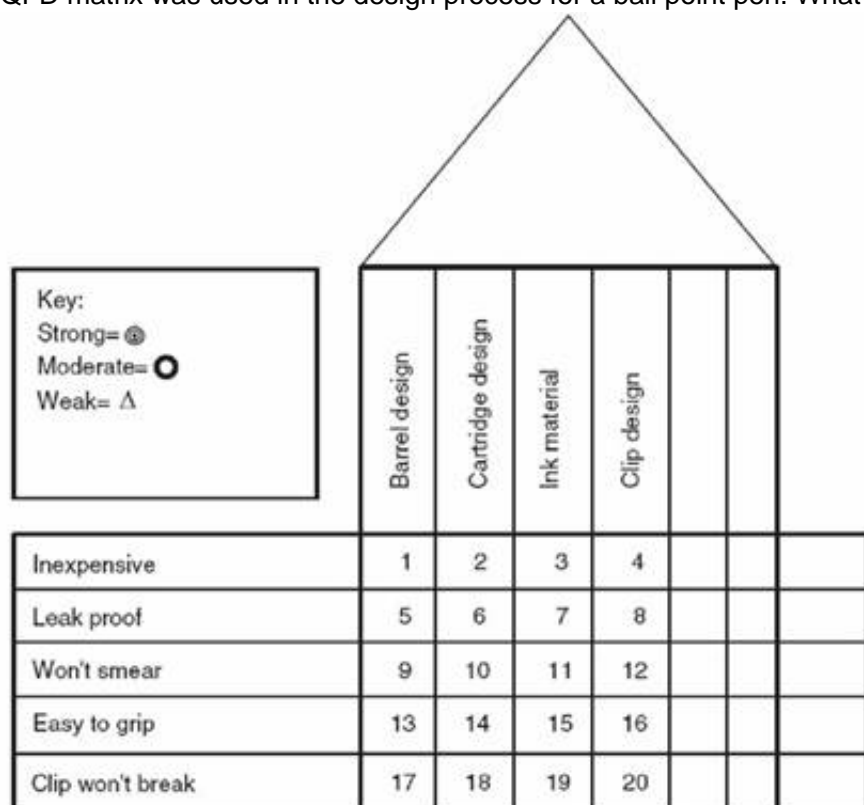
- A. within sample
- B. sample to sample within the hour
- C. hour to hour
- D. none of the above

Answer: A

NEW QUESTION 104

- (Topic 2)

This QFD matrix was used in the design process for a ball point pen. What symbol is appropriate for the square labeled 11?



- A.
- B.
- C.

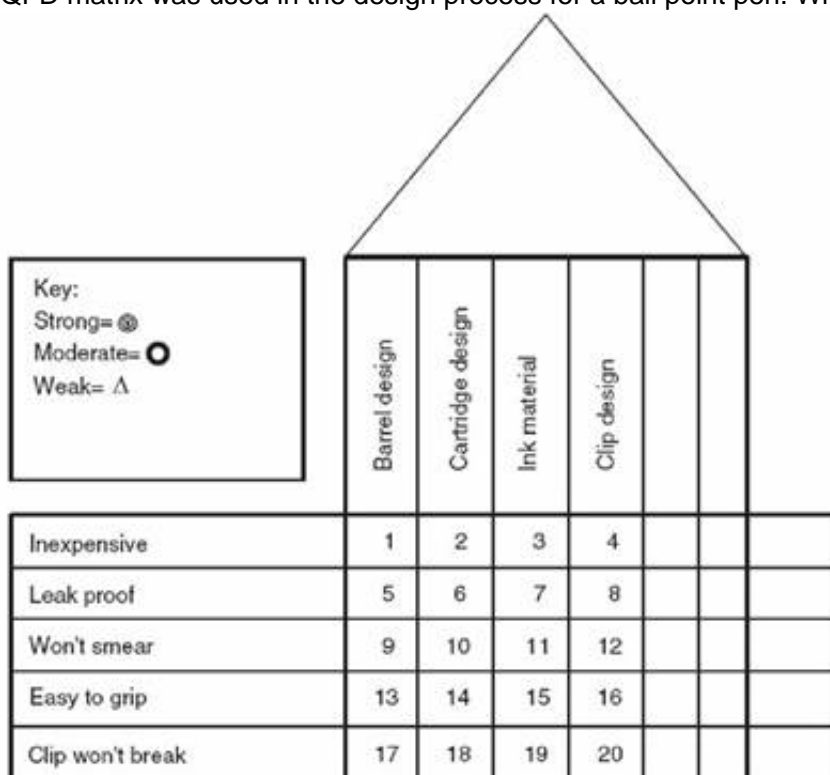
A. none of the above

Answer: B

NEW QUESTION 109

- (Topic 2)

This QFD matrix was used in the design process for a ball point pen. What symbol is appropriate for the square labeled 4?



- A.
- B.
- C.

A. none of the above

Answer: B

NEW QUESTION 110

- (Topic 2)

An x-bar and R chart has four part measurements per sample. The control limits on the averages chart are 2.996 and 3.256. Assume the process data form a normal distribution. What is the probability that the next part measurement falls outside the control limits?

- A. 0.00135
- B. 0.0027
- C. 0.0681
- D. 0.1362
- E. 0.2724
- F. none of the above

Answer: D

NEW QUESTION 112

- (Topic 2)

“Robust design” refers to the ability of the product or service:

- A. to function the same in different conditions
- B. to remain strong
- C. to last a long time
- D. to have a high reliability

Answer: A

NEW QUESTION 116

- (Topic 2)

The distribution is:

- A. symmetric
- B. left skewed
- C. right skewed
- D. normal
- E. uniform

Answer: C

NEW QUESTION 117

- (Topic 2)

Nominal Group Technique is used to:

- A. help a group reach consensus
- B. generate a group on new ideas
- C. provide a consistent stable group leadership
- D. provide a name for the group

Answer: A

NEW QUESTION 119

- (Topic 2)

The critical value(s) is/are:

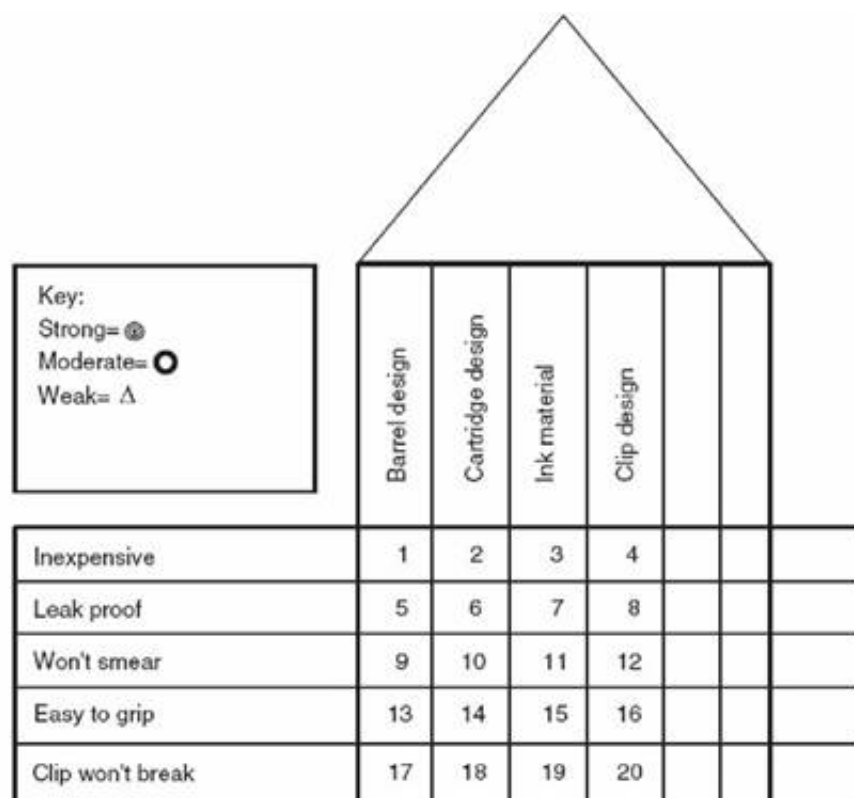
- A. 1.645
- B. 1.96
- C. 1.645
- D. 1.96

Answer: A

NEW QUESTION 121

- (Topic 2)

This QFD matrix was used in the design process for a ball point pen. What symbol is appropriate for the square labeled 2?



- A.
B.
C.

A. none of the above

Answer: B

NEW QUESTION 126

- (Topic 2)

An assembly line has 3 × 3 squares painted behind each person. Signs indicate the parts and quantities that should be placed there. This is an example of:

- A. visual factory
B. kanban
C. poka-yoke
D. standard work
E. set up time reduction (SMED)

Answer: B

NEW QUESTION 127

- (Topic 2)

Find the upper control limit for a range chart if n = 4 and the average range is 2.282.

- A. 2.282
B. 4.564
C. 5.208
D. 3.423

Answer: C

Explanation:

The following formula is for calculating upper control limit for a range chart n = 4

$$UCL_{\bar{R}} = D_4 \bar{R}$$

$$= 2.282 \times 2.282 = 5.208$$

Use the following constants (D4) in the computation

n	D ₄	n	D ₄	n	D ₄
2	3.267	7	1.924	12	1.717
3	2.574	8	1.864	13	1.693
4	2.282	9	1.816	14	1.672
5	2.114	10	1.777	15	1.653
6	2.004	11	1.744		

NEW QUESTION 132

- (Topic 2)

At a particular time, three components are in parallel and each has a reliability of 0.98. What is the reliability of the system?

- A. 0.98
- B. 0.94
- C. 0.37
- D. 0.26
- E. none of the above

Answer: E

NEW QUESTION 137

- (Topic 2)

When Tricia empties a box of capacitors she places it at a designated spot on her work table. Sam notices the empty box and brings a full box of capacitors from the stock room. This is an example of:

- A. visual factory
- B. kanban
- C. poka-yoke
- D. standard work
- E. set up time reduction (SMED)

Answer: B

NEW QUESTION 142

- (Topic 2)

A meeting is called for all three shifts to determine the settings to be used on machine #45. This is an example of:

- A. visual factory
- B. kanban
- C. poka-yoke
- D. standard work
- E. set up time reduction (SMED)

Answer: D

NEW QUESTION 144

- (Topic 2)

An important step in determining the VOC is:

- A. establish viable or comprehensive process feedback loops
- B. ascertain the principles that are values of the corporation
- C. identify the customer
- D. measure the virtual operating continuum potential
- E. all of the above
- F. none of the above

Answer: C

NEW QUESTION 145

- (Topic 2)

The formula for reliability during constant failure rate conditions is: Use this formula to find the reliability of a product at 800 hours if MTBF = 600 hours.

- A. 0.87
- B. 0.78
- C. 0.37
- D. 0.26
- E. none of the above

Answer: D

NEW QUESTION 149

- (Topic 2)

The null hypothesis should be:

- A. rejected
- B. not rejected
- C. accepted

Answer: A

NEW QUESTION 153

- (Topic 2)

A process produced 1394 units. During this time 11 defects were detected. The Rolled Throughput Yield (RTU) is approximately:

- A. 0.992
- B. 7.89
- C. 0.00789
- D. 1.008
- E. all of the above

F. none of the above

Answer: A

NEW QUESTION 155

- (Topic 2)

The overall tolerance for three components in series in an electrical circuit is + 10 . Assuming normal, stable, capable processes produce the components, use stack tolerance techniques to find a set of tolerances for the three components.

- A. 3, 3 and 4 respectively
- B. 7, 7 and 6 respectively
- C. 8, 8 and 8 respectively
- D. 10, 10 and 14 respectively

Answer: D

NEW QUESTION 158

- (Topic 2)

Find the value of (13) in the ANOVA table. Assume:

$$\alpha = 0.10:$$

ANOVA Table

Source	SS	df	MS	F ratio	F crit	P-value
x	1.48	1	(1)	(2)	(3)	(4)
Y	18.6	1	(5)	(6)	(7)	(8)
xxY	12.2	1	(9)	(10)	(11)	(12)
Error	2.1	4	(13)			

- A. 16.4
- B. 3.2
- C. 18.6
- D. 23.2
- E. 4.54
- F. 12.2
- G. 0.525
- H. 2.82
- I. 1.48
- J. 35.4
- K. $0.10 < P < 1$
- L. $0.05 < P < 0.10$
- M. $0.01 < P < 0.05$
- N. $0.005 < P < 0.01$
- O. $0 < P < 0.005$

Answer: G

NEW QUESTION 162

- (Topic 2)

The team development stage characterized by expression of individual opinions and ideas often without regard for team objectives is known as:

- A. performing
- B. norming
- C. conflicting
- D. storming
- E. brainstorming

Answer: D

NEW QUESTION 166

- (Topic 2)

Find the value of (12) in the ANOVA table. Assume:

$$\alpha = 0.10:$$

ANOVA Table

Source	SS	df	MS	F ratio	F crit	P-value
x	1.48	1	(1)	(2)	(3)	(4)
Y	18.6	1	(5)	(6)	(7)	(8)
xxY	12.2	1	(9)	(10)	(11)	(12)
Error	2.1	4	(13)			

- A. 16.4
- B. 3.2
- C. 18.6
- D. 23.2
- E. 4.54
- F. 12.2
- G. 0.525
- H. 2.82
- I. 1.48
- J. 35.4
- K. $0.10 < P < 1$
- L. $0.05 < P < 0.10$
- M. $0.01 < P < 0.05$
- N. $0.005 < P < 0.01$
- O. $0 < P < 0.005$

Answer: N

NEW QUESTION 168

- (Topic 2)

A process shows the following number of defectives. Each sample size for this process is 85. 3 8 2 7 7 6 8 8 9 5 Find the control limits.

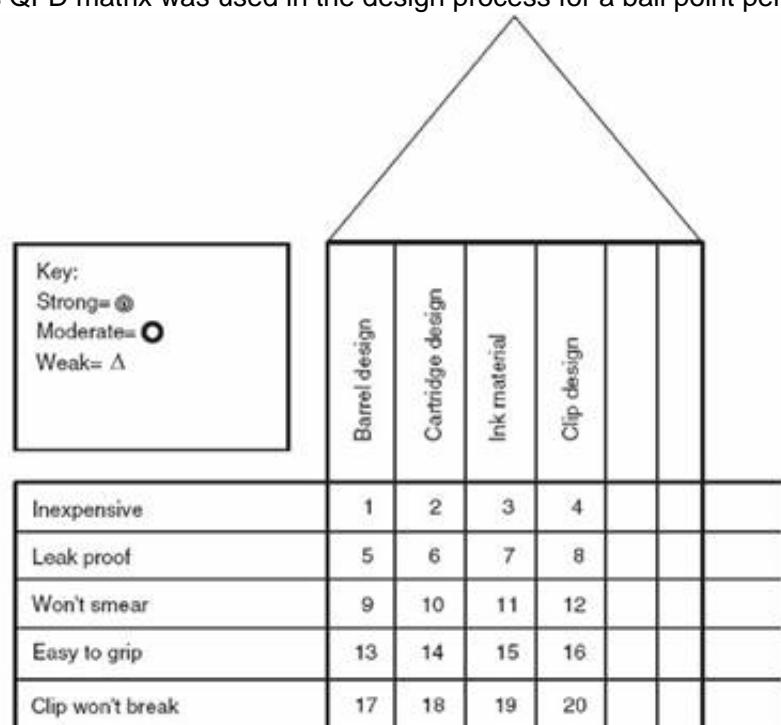
- A. none and 13.5
- B. 12.6 and 25.2
- C. none and 25.2
- D. none of the above

Answer: A

NEW QUESTION 173

- (Topic 2)

This QFD matrix was used in the design process for a ball point pen. What symbol is appropriate for the square labeled 9?



- A.
- B.
- C.

A. none of the above

Answer: D

NEW QUESTION 178

- (Topic 2)

The temperature in a storage location is logged once every 30 minutes. The control chart that is appropriate for displaying these values is:

- A. x-bar and R
- B. median
- C. individual and moving range
- D. p
- E. np
- F. u
- G. c

Answer: C

NEW QUESTION 182

- (Topic 2)

A process shows the following number of defects. Each sample size for this process is 85. 3 8 2 7 7 6 8 8 9 5

What control chart should be used?

- A. x-bar and R
- B. median
- C. individual and moving range
- D. p
- E. np
- F. c
- G. u
- H. none of the above

Answer: F

NEW QUESTION 184

- (Topic 2)

An full factorial experiment has three factors. Each factor has three levels. The number of test combinations or runs is:

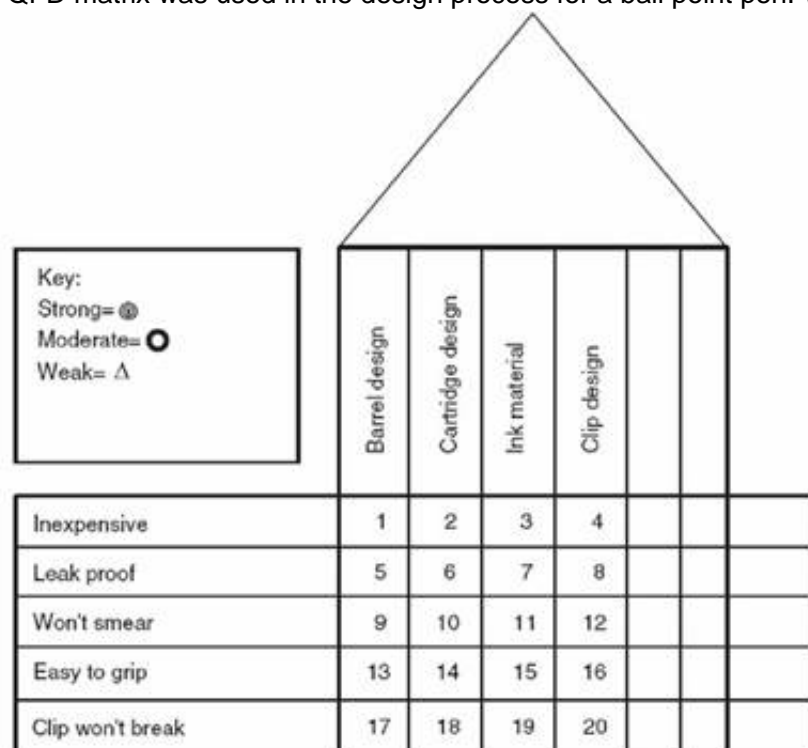
- A. 9
- B. 6
- C. 27
- D. 36
- E. 33

Answer: C

NEW QUESTION 185

- (Topic 2)

This QFD matrix was used in the design process for a ball point pen. What symbol is appropriate for the square labeled 6?



- A.
- B.
- C.

A. none of the above

Answer: B

NEW QUESTION 188

- (Topic 2)

A Six Sigma project designed to solve a particular problem needs a definition/scope statement to help avoid:

- A. going beyond the problem into other problems
- B. failing to cover the entire problem
- C. misunderstanding and disagreement between team members regarding problem boundaries
- D. all of the above
- E. none of the above

Answer: D

NEW QUESTION 191

- (Topic 2)

A and B are events. $P(A) = 0.80$ and $P(B) = 0.90$.

- A. events A and B are disjoint or mutually exclusive
- B. events A and B are not disjoint or mutually exclusive
- C. $P(A \text{ and } B) = 0$
- D. $P(A \text{ and } B) = 1.7$

Answer: B

NEW QUESTION 192

- (Topic 2)
Find Cpk

- A. 2.00
- B. 0.56
- C. 1.33
- D. 0.44

Answer: D

NEW QUESTION 196

- (Topic 2)

A team wants to make a schedule for a project showing which tasks must be done sequentially and which may be done simultaneously. Which tool is most appropriate?

- A. matrix diagram
- B. cause and effect diagram
- C. process decision program chart
- D. affinity diagram
- E. activity network diagram
- F. tree diagram
- G. prioritization matrix
- H. matrix diagram
- I. interrelationship digraph

Answer: E

NEW QUESTION 200

- (Topic 2)

If the value of the test statistic had been 0.185, what action should have been taken regarding the null hypothesis?

- A. rejected
- B. accepted
- C. none of the above
- D. all of the above

Answer: C

NEW QUESTION 203

- (Topic 2)

Find the average difference dbar.

Document #	Time Reqd, sec	
	Ptr #1	Ptr#2
1	4.2	3.9
2	5.6	5.5
3	2.8	2.9
4	7.1	6.7
5	11.5	11.0
6	8.2	8.1
7	12.3	11.8
8	13.5	13.0

- A. 0.2875
- B. 0.3502
- C. 0.2714
- D. 0.2295

Answer: A

NEW QUESTION 206

- (Topic 2)

The number of factors, levels and replications:

- A. 3, 3, 3
- B. 2, 3, 2
- C. 3, 2, 2,

- D. 3, 2, 3
- E. 2, 2, 2
- F. none of the above

Answer: D

NEW QUESTION 208

- (Topic 2)

As opposed to earlier emphases lean manufacturing tends to stress:

- A. making value added activities more efficient
- B. eliminating, simplifying or reducing non-value added activities

Answer: B

NEW QUESTION 212

- (Topic 2)

The mean, median and mode of a distribution have the same value. What can be said about the distribution:

- A. it is exponential
- B. it is normal
- C. it is uniform
- D. none of the above

Answer: D

NEW QUESTION 214

- (Topic 2)

A project whose definition does not include performance metrics:

- A. will typically be short term
- B. use statistical inference
- C. have a high risk of failure
- D. should not be approved
- E. none of the above

Answer: D

NEW QUESTION 219

- (Topic 2)

If item A is more likely to be detected than item B which will have the highest Severity value?

- A. item A
- B. item B
- C. cannot be determined

Answer: C

NEW QUESTION 220

- (Topic 2)

A helpful time to use a Quality Function Deployment matrix is:

- A. while planning for a new or redesigned process
- B. while planning for new or redesigned parts
- C. while planning for a new or redesigned product
- D. all of the above
- E. none of the above

Answer: D

NEW QUESTION 224

- (Topic 2)

This experimental design is:

- A. full factorial
- B. half factorial
- C. quarter factorial
- D. none of the above

Answer: B

NEW QUESTION 227

- (Topic 2)

A process shows the following number of defectives. Each sample size for this process is 85. 3 8 2 7 7 6 8 8 9 5
What control chart should be used?

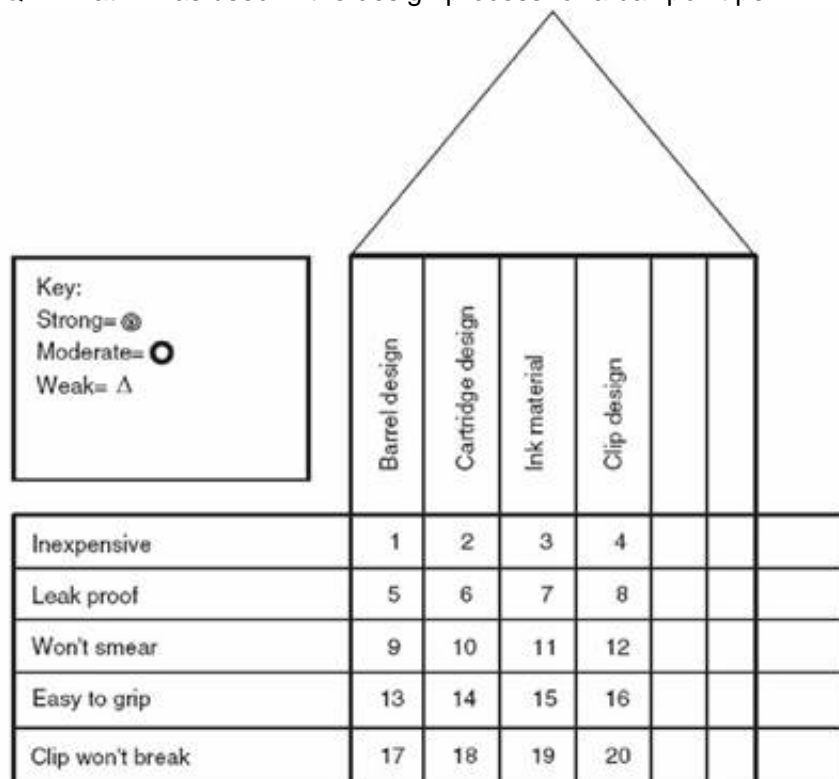
- A. x-bar and R
- B. median
- C. individual and moving range
- D. p
- E. np
- F. c
- G. u
- H. none of the above

Answer: E

NEW QUESTION 230

- (Topic 2)

This QFD matrix was used in the design process for a ball point pen. What symbol is appropriate for the square labeled 10?



- A.
- B.
- C.

A. none of the above

Answer: A

NEW QUESTION 231

- (Topic 2)

An x-bar and R chart has four part measurements per sample The control limits on the averages chart are 2.996 and 3.256. Assume the process data form a normal distribution.What is the probability that the next plotted point falls outside the control limits?

- A. 0.00135
- B. 0.0027
- C. 0.0054
- D. none of the above

Answer: B

NEW QUESTION 232

- (Topic 2)

number of scratches	6	5	7	5	6
sample size	120	110	111	128	110

A control chart will be used to monitor the number of scratches on a product. The following data have been collected: The appropriate control chart to use is:

- A. x-bar and R
- B. median
- C. individual and moving range
- D. p
- E. np
- F. u
- G. c

Answer: F

NEW QUESTION 236

- (Topic 2)

There have been some instances in which 1.5 inch sheet metal screws are used where 1.25 inch should have been used. This produces a critical defect. The decision is made to have all 1.25 inch screws have a square reduced head and all 1.5 inch screws be Phillips. This is an example of:

- A. visual factory
- B. kanban
- C. poka-yoke
- D. standard work
- E. set up time reduction (SMED)

Answer: C

NEW QUESTION 239

- (Topic 2)

If item A is more likely to be detected than item B which will have the highest Occurrence value?

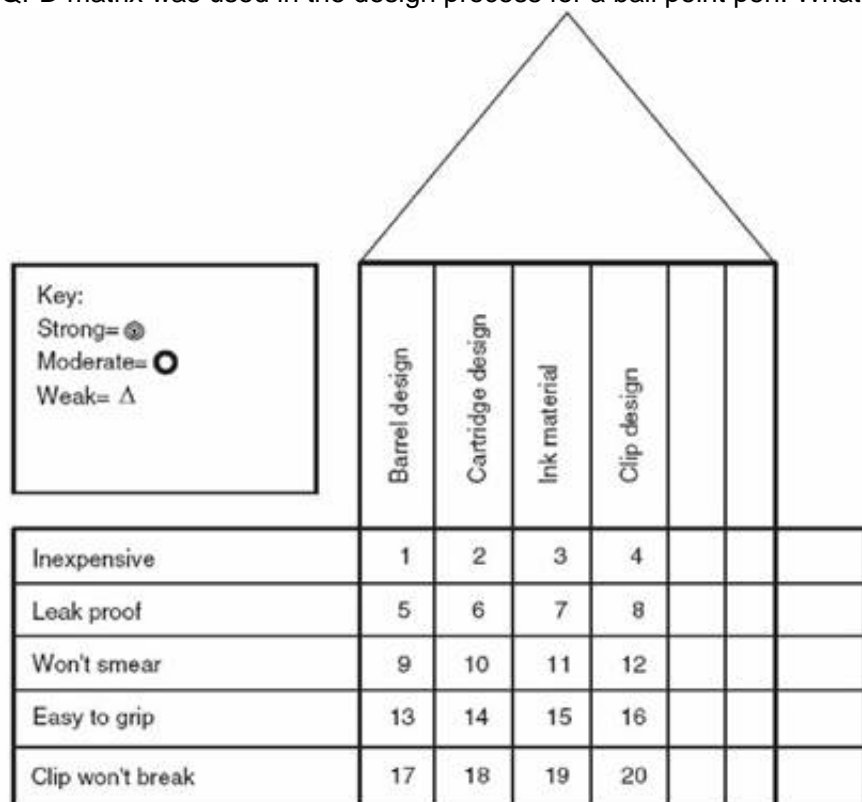
- A. item A
- B. item B
- C. cannot be determined

Answer: C

NEW QUESTION 244

- (Topic 2)

This QFD matrix was used in the design process for a ball point pen. What symbol is appropriate for the square labeled 12?



- A.
- B.
- C.

A. none of the above

Answer: D

NEW QUESTION 248

- (Topic 2)

A newspaper article describes a high positive correlation between obesity and orange juice consumption among six-year-olds. Parents who restrict the use of orange juice for their children have:

- A. made a type I error
- B. made a type II error
- C. misunderstood margin of error
- D. confused correlation with causation

Answer: D

NEW QUESTION 251

- (Topic 2)

The mean of a Poisson distribution is 2.94. It's variance is:

- A. Not enough information is given
- B. 1.71
- C. 8.64
- D. 74.7
- E. 1.31

Answer: C

Explanation:

The correct answer is C because the mean of poisson distribution is 2.94, hence the variance would be 8.64

U =
 variance = 2

NEW QUESTION 252

- (Topic 2)

A team wants a technique for displaying the connection between various customer needs and various features on a product. They should use:

- A. written and diagrammed work instructions
- B. flow charts and process maps
- C. cause and effect diagrams
- D. Pareto chart
- E. relationship matrix

Answer: E

NEW QUESTION 256

- (Topic 2)

The following is a set of individual measurements: 3 5 4 5 6 3 4 3 2 4 5 6 5 7 6 4 5 5 8 7 6 6 7 7 4
 Find the control limits for the range chart.

- A. none and 4.2
- B. none and 5.1
- C. 0.2 and 1.5
- D. none of the above

Answer: A

NEW QUESTION 260

- (Topic 2)

Proposed Six Sigma projects that are not in some way linked to organizational goals:

- A. will typically be short term
- B. use statistical inference
- C. have a high risk of failure
- D. should not be approved
- E. none of the above

Answer: D

NEW QUESTION 261

- (Topic 2)

Find the value of m or b1:

- A. 0.25
- B. 0.63
- C. 0.75
- D. 1.22

Answer: C

NEW QUESTION 264

- (Topic 2)

This QFD matrix was used in the design process for a ball point pen. What symbol is appropriate for the square labeled 13?

<div> Key: Strong= ● Moderate= ○ Weak= △ </div>							
		Barrel design	Cartridge design	Ink material	Clip design		
Inexpensive	1	2	3	4			
Leak proof	5	6	7	8			
Won't smear	9	10	11	12			
Easy to grip	13	14	15	16			
Clip won't break	17	18	19	20			

- A.
- B.

C.

A. none of the above

Answer: B

NEW QUESTION 269

- (Topic 2)

A team has completed a brainstorming session that has generated a large number of ideas. The team needs to organize these ideas in natural groupings. Which tool is most appropriate?

- A. matrix diagram
- B. cause and effect diagram
- C. process decision program chart
- D. affinity diagram
- E. activity network diagram
- F. tree diagram
- G. prioritization matrix
- H. matrix diagram
- I. interrelationship digraph

Answer: D

NEW QUESTION 272

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