

Six Sigma White Belt

Six Sigma SSWB

Version Demo

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QUESTION NO: 1

What is regression?

- A. It is a procedure used to monitor process behavior.
- B. Regression is used for establishing the relationship between input and output variables.
- C. It is an output variable set of six Sigma.
- D. It is a defined relationship between $\bar{x}$ and R charts.

ANSWER: B

Explanation:

Regression is used for establishing the relationship between input and output variables. In Six Sigma, regression analysis is a statistical method used to model how one or more input variables (often called X's) are associated with, and can help predict, an output or response variable (the Y). This supports the practical Six Sigma concept of identifying the vital inputs that influence a process result: $Y = f(X)$. For example, a team might use regression to quantify how oven temperature, baking time, and ingredient quantity relate to the final moisture level of a product. The resulting model estimates the expected change in the output for a change in an input, while holding the model's other inputs constant. Regression can therefore help teams understand process behavior, prioritize improvement efforts, and make data-based predictions. Its conclusions should be assessed using appropriate diagnostics and the context of the process, including whether the relationship is plausibly causal. The National Institute of Standards and Technology describes regression as a technique for investigating and modeling the relationship between variables, and ASQ identifies regression analysis as a key statistical tool for analyzing relationships among process variables. See [NIST's regression overview](#) and [ASQ's regression analysis resource](#).

QUESTION NO: 2

Six Sigma should be focused on:

- A. Customer Satisfaction
- B. Government Satisfaction
- C. Employee Satisfaction
- D. Supplier Satisfaction

ANSWER: A

Explanation:

Six Sigma should be focused on **Customer Satisfaction**. Its central purpose is to improve the quality, consistency, and speed of processes in ways that matter to customers. Six Sigma teams begin by identifying the voice of the customer: the needs, expectations, and requirements that define value from the customer's perspective. Those needs are then translated into measurable critical-to-quality requirements, allowing the organization to focus improvement work on reducing defects, variation, delays, and waste that affect the customer experience.

Customer focus also provides the standard for judging whether a process improvement is successful. A project is not merely about applying statistical tools or achieving a lower defect rate in isolation; it should produce better outcomes that customers recognize, such as more reliable products, accurate service, faster delivery, or fewer errors. This alignment helps ensure that improvement efforts support organizational performance and long-term value. ASQ identifies customer focus as a core element of Six Sigma, emphasizing that organizations should understand customer requirements and use data to improve processes accordingly. See [ASQ's Six Sigma overview](#) and [NIST Baldrige guidance on customer-focused excellence](#).

QUESTION NO: 3

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What process can create panic amongst employees if it hasn't been thoroughly explained to them? _____

A. Change management

ANSWER: A

Explanation:

Change management is correct because it is the structured process used to prepare people for, implement, and sustain organizational changes. In a Six Sigma context, improvement work can alter workflows, responsibilities, performance measures, technology, or staffing practices. If employees do not understand the reason for a change, how it will affect their daily work, when it will occur, and what support they will receive, uncertainty can quickly lead to anxiety and panic. Effective change management addresses this human side of process improvement through timely communication, stakeholder engagement, training, leadership support, and opportunities for employees to ask questions and provide feedback.

Clear explanation is especially important because employees are more likely to support a changed process when they understand its purpose and their role in making it successful. A planned change-management approach therefore helps reduce resistance, builds trust, and improves the likelihood that process improvements will be adopted and maintained. The American Society for Quality describes change management as a disciplined approach for transitioning individuals and organizations to a desired future state, while the Project Management Institute emphasizes communication and stakeholder engagement as central change activities. See [ASQ: Change Management](#) and [PMI: Effective Change Management Strategies](#).

QUESTION NO: 4

What do you understand by Mura in six sigma?

A. Mura is known as the raw materials.

B. Mura is the name of a product.

C. Mura is the term of waste.

D. Mura is the term of unused elements.

ANSWER: C

Explanation:

Mura is the term of waste. is correct because Mura is a Japanese Lean-management term describing unevenness, inconsistency, or irregularity in a process. It is commonly addressed alongside Muda (waste) and Muri (overburden), often called the "three Ms." Although Mura does not always describe a single discrete waste item, it creates conditions that generate waste, delays, quality problems, excess inventory, and inefficient use of people or equipment. For example, fluctuating workloads or inconsistent production schedules can cause teams to alternate between idle time and rushed work, reducing process flow and predictability. Six Sigma and Lean practices seek to reduce this variation by standardizing work, balancing workloads, and designing processes around stable customer demand. Therefore, identifying and reducing Mura supports the broader improvement goal of creating reliable, efficient, and customer-focused processes. The Lean Enterprise Institute discusses Mura as unevenness and explains its relationship to waste and overburden in Lean systems: [Lean Enterprise Institute: Mura](#). Additional background on the three Ms is available from [Lean Enterprise Institute: Muda](#).

QUESTION NO: 5

Lean principles often go hand-in-hand with Six Sigma principles.

A. True

B. False

ANSWER: A

Explanation:

True is correct. Lean and Six Sigma are commonly used together because their improvement approaches are complementary. Lean concentrates on maximizing customer value by improving process flow and removing non-value-added work, commonly called waste. Six Sigma uses data, measurement, and structured problem solving—often the DMAIC method—to reduce variation and defects. Applied together as Lean Six Sigma, these approaches help an organization make work both faster and more consistent: Lean improves the speed and efficiency of the process, while Six Sigma improves its capability and reliability.

This combination is widely recognized in continuous-improvement practice. For example, a team may first map a process to identify delays, handoffs, and unnecessary steps, then use data to investigate the sources of errors or inconsistent outcomes in the remaining process. The shared focus on customer requirements, fact-based decisions, and sustained process improvement makes Lean principles a natural partner for Six Sigma principles. The American Society for Quality describes Lean Six Sigma as combining Lean's focus on waste reduction with Six Sigma's focus on variation reduction; see [ASQ's Lean Six Sigma overview](#). Additional context on Lean thinking and value can be found at the [Lean Enterprise Institute](#).

QUESTION NO: 6

Competitive evaluation is done after the House of Quality is completed.

A. True

B. False

ANSWER: B

Explanation:

"False" is correct because competitive evaluation is an input to, and a component of, the House of Quality rather than an activity reserved for after it has been completed. In Quality Function Deployment, the team first captures and prioritizes customer requirements, then assesses how the organization's offering and competing offerings perform against those requirements. This customer-perception benchmarking is typically displayed in the House of Quality's customer competitive-assessment section. The team may also benchmark competitors' technical characteristics in the technical competitive-assessment area.

Using competitive information while building the matrix helps the team identify meaningful improvement opportunities, set realistic target values, and focus engineering effort where customer needs and competitive gaps are greatest. The relationships between customer needs and technical requirements, technical correlations, priorities, and targets are therefore developed with competitive context available. Once the House of Quality is complete, its findings can support subsequent planning and improvement work, but the competitive evaluation should already have informed the completed analysis. The American Society for Quality describes QFD as translating customer needs into product or service requirements, while House of Quality resources commonly include competitive assessment within that translation structure. See [ASQ's Quality Function Deployment overview](#) and [iSixSigma's House of Quality reference](#).

QUESTION NO: 7

What does the Six Sigma mean?

A. ultimately reduces process costs

B. decreases customer satisfaction

C. is a methodology for process improvement

D. is a statistical concept that seeks to find variation in processes

E. all of the above

ANSWER: C

Explanation:

Six Sigma is a disciplined, data-driven methodology for improving processes by identifying the factors that create errors, delays, waste, and inconsistent results, then controlling those factors so performance is sustained. Its central aim is to reduce process variation and defects in ways that matter to customers and the organization. In practical improvement work, teams define the problem and customer requirements, measure current performance, analyze causes, improve the process, and establish controls to maintain the gains. This structured approach is commonly known as DMAIC: Define, Measure, Analyze, Improve, and Control.

Accordingly, *is a methodology for process improvement* accurately captures what Six Sigma means in a White Belt context. Six Sigma also has statistical roots: the term “sigma” refers to standard deviation, a measure of variation. However, Six Sigma is more than a statistical measure; it is an organizational improvement approach that uses facts, measurement, and root-cause analysis to make processes more capable and reliable. The American Society for Quality describes Six Sigma as a method that provides organizations tools to improve business-process capability, while NIST provides foundational material on statistical process control and variation. See [ASQ's Six Sigma overview](#) and the [NIST/SEMATECH e-Handbook of Statistical Methods](#).

QUESTION NO: 8

Which of the following is NOT considered continuous data?

- A. The number of people in a stadium
- B. Temperature
- C. Time spent waiting in a waiting room
- D. Birth weights

ANSWER: A

Explanation:

The number of people in a stadium is the correct answer because it is count data, also called discrete data. A count represents separate, distinct whole-number occurrences: a stadium may contain 0, 1, 2, and so on, but it cannot contain a fractional number of people. In Six Sigma measurement and data analysis, this distinction matters because discrete data are obtained by counting occurrences, whereas continuous data are obtained through measurement and can, in principle, take any value within a range depending on the precision of the measuring system.

Understanding whether a characteristic is discrete or continuous helps a team select suitable displays, summary measures, and analytical methods during process improvement. Counts such as the number of people are commonly analyzed as attribute data, while measured process characteristics support variable-data approaches. The American Society for Quality describes continuous data as measured values that can have any value within a specified interval and distinguishes them from discrete count data. See [ASQ's data collection and analysis resource](#). NIST's statistical handbook also discusses the distinction between continuous and discrete random variables and their appropriate statistical treatment: [NIST Engineering Statistics Handbook](#).

QUESTION NO: 9

The “5 Why” technique helps to identify the root cause of a problem.

- A. True
- B. False

ANSWER: A

Explanation:

The correct answer is "True." The 5 Why technique is a simple root-cause-analysis method used to move beyond a visible symptom and investigate the underlying process, condition, or decision that allowed a problem to occur. A team begins by clearly stating the problem and asking "Why did this happen?" It then uses each answer as the basis for the next "why," continuing until it reaches a cause that can be addressed through an effective corrective action. Although the name suggests exactly five questions, the appropriate number depends on the situation; the goal is evidence-based understanding rather than reaching a predetermined count.

In Six Sigma and continuous-improvement work, this technique supports fact-focused problem solving, especially for straightforward issues or as an initial investigation before using more detailed tools. It is most valuable when the team verifies each causal link with process knowledge and available data, involves people familiar with the work, and defines an action that prevents recurrence. The method originated within the Toyota Production System and remains a widely recognized approach for identifying root causes. See the [American Society for Quality overview of Five Whys](#) and [Lean Enterprise Institute's Five Whys definition](#).

QUESTION NO: 10

Which of the following is true about Simple Random Sampling?

- A. Simple random sampling is a method of choosing samples randomly from an infinite population.
- B. This is the process of sampling, which includes collecting various samples randomly from one or more groups.
- C. In this process a company gives a random sample of its production for being approved as a sample.
- D. None of the above.
- E. Simple random sampling selects units from a defined population so that each unit, and each possible sample of a given size, has an equal chance of selection.

ANSWER: E

Explanation:

Simple random sampling selects units from a defined population so that each unit, and each possible sample of a specified size, has an equal chance of selection. This method is a foundational probability-sampling approach because selection is governed by a random mechanism rather than by personal judgment, convenience, or a production approval process. In a Six Sigma context, it helps a team obtain data that can represent the process population without systematically favoring particular shifts, operators, time periods, batches, or product types. A team might assign an identifier to every item in the population and use a random-number generator to select the required identifiers. The population must be clearly defined before sampling begins, including the process, time frame, and units of interest. The U.S. National Institute of Standards and Technology describes a simple random sample as one in which all samples of a specified size have the same probability of being selected. This equal-probability principle supports sound statistical inference when the sampling frame is complete and the random-selection procedure is properly implemented. See the [NIST Engineering Statistics Handbook](#) and the [Statistics Canada overview of simple random sampling](#).

QUESTION NO: 11

What is the use of ANOVA in Six Sigmas?

- A. ANOVA is a method of calculation.
- B. It tests whether the means of three or more groups of continuous data differ significantly.
- C. Both of the above.
- D. None of the above.

ANSWER: B

Explanation:

ANOVA (analysis of variance) is used to test whether the average values of a continuous outcome differ significantly across three or more groups, conditions, or process-factor levels. In a Six Sigma project, this helps a team determine whether an observed difference in a critical-to-quality measure, such as cycle time, yield, or defect-related cost, is likely associated with a categorical input rather than ordinary random variation. For example, a team may use ANOVA to evaluate whether mean production time differs among several machines, shifts, suppliers, or process settings.

Although ANOVA calculates group means as part of the analysis, its practical purpose is to compare the variation between group means with the variation within groups and assess whether the differences are statistically meaningful. This supports evidence-based root-cause investigation and improvement decisions during the Analyze phase of DMAIC. ANOVA is generally applied when the response is continuous and the comparison involves multiple groups; the result is commonly summarized using an F statistic and a p-value. See the [NIST/SEMATECH e-Handbook discussion of one-way ANOVA](#) and the [ASQ Six Sigma overview](#).

QUESTION NO: 12

Which of the following methods seeks to effect positive change in processes and organizations by using a set of practical tools to address business issues and process problems?

- A. BPR (Business Process Reengineering)
- B. TQM (Total Quality Management)
- C. Rummler-Brache
- D. Six Sigma Methodologies
- E. Lean
- F. This statement can apply to more than one of the above.

ANSWER: F

Explanation:

“This statement can apply to more than one of the above.” is correct because the description is intentionally broad and captures a shared purpose of several established process-improvement approaches. Six Sigma uses structured, data-based methods such as DMAIC and practical quality tools to reduce variation, solve process problems, and improve business performance. Lean similarly applies tools for identifying waste, improving flow, and delivering customer value. Total Quality Management promotes organization-wide, continuous improvement through quality principles and problem-solving practices. Business Process Reengineering and the Rummler-Brache approach also seek meaningful organizational and process change, although their methods and scale of change differ.

In a White Belt context, it is important to recognize that process improvement is not exclusive to one branded methodology. These approaches provide different frameworks and toolsets, but each can be used to understand performance, identify problems, implement improvements, and sustain better results. Six Sigma’s emphasis on measurable improvement is well documented by the [American Society for Quality’s Six Sigma overview](#). For the broader continuous-improvement and quality-management perspective, see the [ISO overview of quality management](#).

QUESTION NO: 13

The stage where the starting point metrics are recorded to baseline the current performance level.

- A. Analyze
- B. Control
- C. Baseline Phase

ANSWER: D

Explanation:

Measure is the DMAIC stage in which the team establishes a reliable picture of the process's current condition. It defines the problem in measurable terms, identifies the relevant performance measures, gathers data, and calculates the baseline performance level. This starting-point evidence may include measures such as defect rate, cycle time, yield, cost, or customer-response time, depending on the project's objective. Recording these metrics gives the team an objective benchmark against which it can evaluate the impact of improvements later in the project.

A sound baseline depends on clear operational definitions and trustworthy data collection, so the Measure work commonly includes confirming how each metric is calculated and checking that the measurement approach is sufficiently consistent for the decision being made. The baseline then becomes the reference point used throughout the remaining DMAIC work to quantify the improvement achieved and to demonstrate whether the project met its target. ASQ describes the Measure phase as the point at which data are collected to establish the current process performance; see [ASQ's DMAIC overview](#). For further DMAIC guidance, see [iSixSigma's DMAIC roadmap](#).

QUESTION NO: 14

Values of inches, time, and miles per gallon normally would be described as:

- I. Variable
 - II. Continuous
 - III. Measurable IV. Discrete
- A. I and III only
- B. II and III only
- C. I, II, and III only
- D. I, II, III, and IV
- E. Variable
- II. Continuous
- III. Measurable IV. Discrete

ANSWER: C

Explanation:

I, II, and III only is correct because inches, elapsed time, and miles per gallon are quantitative characteristics obtained by measurement. In Six Sigma terminology, a *variable* is a characteristic that can take differing numerical values from one observation, unit, or condition to another. Length, duration, and fuel-economy results naturally meet that definition.

They are also normally treated as *continuous* data. A continuous measurement can, in principle, take any value within a range, including fractional or decimal values. For example, a length may be 12.37 inches, a cycle time may be 4.216 seconds, and fuel economy may be 28.6 miles per gallon. The number of decimal places displayed is limited by the measuring system's resolution, but that reporting limit does not change the underlying measurement into a count.

Finally, these values are *measurable* because they result from a measurement process using defined units and instruments or calculation methods. This distinction is important in process-improvement work because continuous measurement data supports analysis of variation, averages, spread, and process capability. NIST's statistical engineering handbook discusses continuous measurements and their use in statistical analysis: [NIST/SEMATECH e-Handbook of Statistical Methods](#). For foundational Six Sigma terminology and quality concepts, see the [ASQ Quality Glossary](#).

QUESTION NO: 15

The Six Sigma concept redefines quality performance in terms of defects per million opportunities (dpmo).

- A. True
- B. False

ANSWER: A

Explanation:

The correct answer is **True**. Six Sigma evaluates process quality by focusing on defects relative to the number of opportunities for a defect to occur, commonly expressed as defects per million opportunities (DPMO). This measure is useful because it accounts for the fact that a single unit, transaction, or service can contain multiple characteristics or steps at which a defect may occur. It therefore provides a normalized way to compare quality performance across processes that differ in volume or complexity.

In Six Sigma terminology, a defect is a failure to meet a customer requirement or specification, while an opportunity is a measurable chance for such a failure within one unit. DPMO is calculated as the number of defects divided by the total number of defect opportunities, multiplied by one million. The Six Sigma quality target is conventionally associated with approximately 3.4 defects per million opportunities when applying the standard long-term sigma shift convention. This defect-focused measurement supports the methodology's aim of reducing variation and improving process capability. See the [American Society for Quality's Six Sigma overview](#) and [NIST's Six Sigma concepts resource](#).

QUESTION NO: 16 - (DRAG DROP)

DRAG DROP

Match a notion with the definition.

Select and Place:

What does DPMO stand for?	Improves customer satisfaction and shareholder value
What does the Six Sigma strategy do?	Uncovering the gaps or defects in a business process.
What are the first two goals of the Six Sigma Methodology?	They are a way of measuring perfection.
What is the most important part of the Six Sigma Process?	Defects Per Million Opportunities
What are the sigmas for?	Discover all of the problems, then take actions to reduce them.

ANSWER:

What does the Six Sigma strategy do?

What is the most important part of the Six Sigma Process?

What are the sigmas for?

What does DPMO stand for?

What are the first two goals of the Six Sigma Methodology?

Explanation:

The completed matching correctly connects the core White Belt concepts to their intended meanings. DPMO means “Defects Per Million Opportunities,” a standard Six Sigma metric that expresses how frequently defects occur relative to all possible opportunities for a defect. This normalization lets teams compare process performance even when processes have different volumes or numbers of defect opportunities. The [American Society for Quality's Six Sigma overview](#) describes Six Sigma as a disciplined, data-driven approach focused on reducing defects and variation.

The Six Sigma strategy is correctly associated with improving customer satisfaction and shareholder value. Better quality, reduced rework, more reliable delivery, and improved process capability create customer value while also improving organizational performance. The key work in a Six Sigma process is identifying gaps, variation, and defects in the business process, because improvement begins with understanding the current performance and locating the sources of failure. This is consistent with the [NIST Baldrige performance-excellence guidance](#), which emphasizes systematic improvement based on measurable process results.

Sigmas are correctly described as a way of measuring perfection: the sigma level represents process capability and indicates how consistently outputs meet requirements. The initial improvement goals are also correctly framed as discovering problems and then taking action to reduce them. In practical terms, a team first makes process issues visible through facts and data, then applies targeted corrective improvements. Together, these matches reflect the central Six Sigma cycle of measuring performance, finding defect sources, reducing them, and delivering better value.

QUESTION NO: 17

Poka-yoke is best described as:

- A. A method of preventing or immediately detecting errors
- B. A technique for calculating process standard deviation
- C. A chart used to monitor process averages
- D. A method for selecting an acceptance sample

ANSWER: A

Explanation:

Poka-yoke is a mistake-proofing method used to prevent an error from occurring or to make the error immediately obvious before it creates a defect. The method is commonly associated with Lean and can support Six Sigma improvements by reducing the opportunity for human or process errors.

Examples include a connector that can be inserted only in the correct orientation or a required system field that prevents submission when essential information is missing. Effective poka-yoke designs build quality into the process rather than relying only on final inspection. See the [Lean Enterprise Institute's poka-yoke definition](#).

QUESTION NO: 18

FILL BLANK

What is the definition of Six Sigma?_____

A. A data-driven methodology for improving processes by reducing variation and defects.

ANSWER: A

Explanation:

Six Sigma is a disciplined, data-driven methodology for improving processes by reducing defects and variation. It combines a management philosophy, defined improvement methods, and analytical tools to help organizations understand process performance, identify root causes of problems, and sustain measurable improvements. In a process-improvement context, "sigma" refers to the statistical concept of variation; the Six Sigma performance goal is commonly associated with approximately 3.4 defects per million opportunities when the conventional 1.5-sigma shift is applied.

For a Six Sigma White Belt, the most important part of the definition is that Six Sigma is not merely a quality inspection activity. It is a structured approach to improving how work is performed so that customer requirements are met more consistently. Teams use facts and data to focus on critical problems, reduce errors, improve quality, and increase efficiency. Improvement work is frequently organized through DMAIC: Define, Measure, Analyze, Improve, and Control. The definition "A data-driven methodology for improving processes by reducing variation and defects" accurately captures these foundational concepts. The American Society for Quality describes Six Sigma as a method that provides organizations with tools to improve business-process capability. See [ASQ's Six Sigma overview](#) and [NIST's Six Sigma methodology resource](#).

QUESTION NO: 19

Order the correct steps of the Demming Cycle:

A. Plan, Do, Check, Act

B. Plan, Act, Do, Check

C. Act, Do, Check, Plan

D. Plan, Check, Do, Act

ANSWER: A

Explanation:

The correct sequence is **Plan, Do, Check, Act**, commonly abbreviated as PDCA. This repeating improvement cycle, often called the Deming cycle (despite the question's spelling), gives teams a structured way to test and sustain process improvements. During *Plan*, the team identifies a problem or opportunity, studies the current condition, and defines a proposed change along with expected results. During *Do*, it implements the change on a limited or controlled scale where practical. During *Check*, the team reviews the resulting data and compares actual performance with the expected outcome to determine what was learned. During *Act*, it standardizes a successful change, applies the learning more broadly, or begins another PDCA iteration if additional refinement is needed.

For Six Sigma White Belt learners, PDCA is an important foundational continuous-improvement method because it emphasizes evidence-based learning rather than making a change once and assuming it worked. Its cyclical nature supports ongoing process control and improvement. The American Society for Quality describes PDCA as a four-stage problem-solving model used to improve processes and products: [ASQ: PDCA Cycle](#). The method is also described by the [W. Edwards Deming Institute](#) as an iterative learning and improvement cycle.