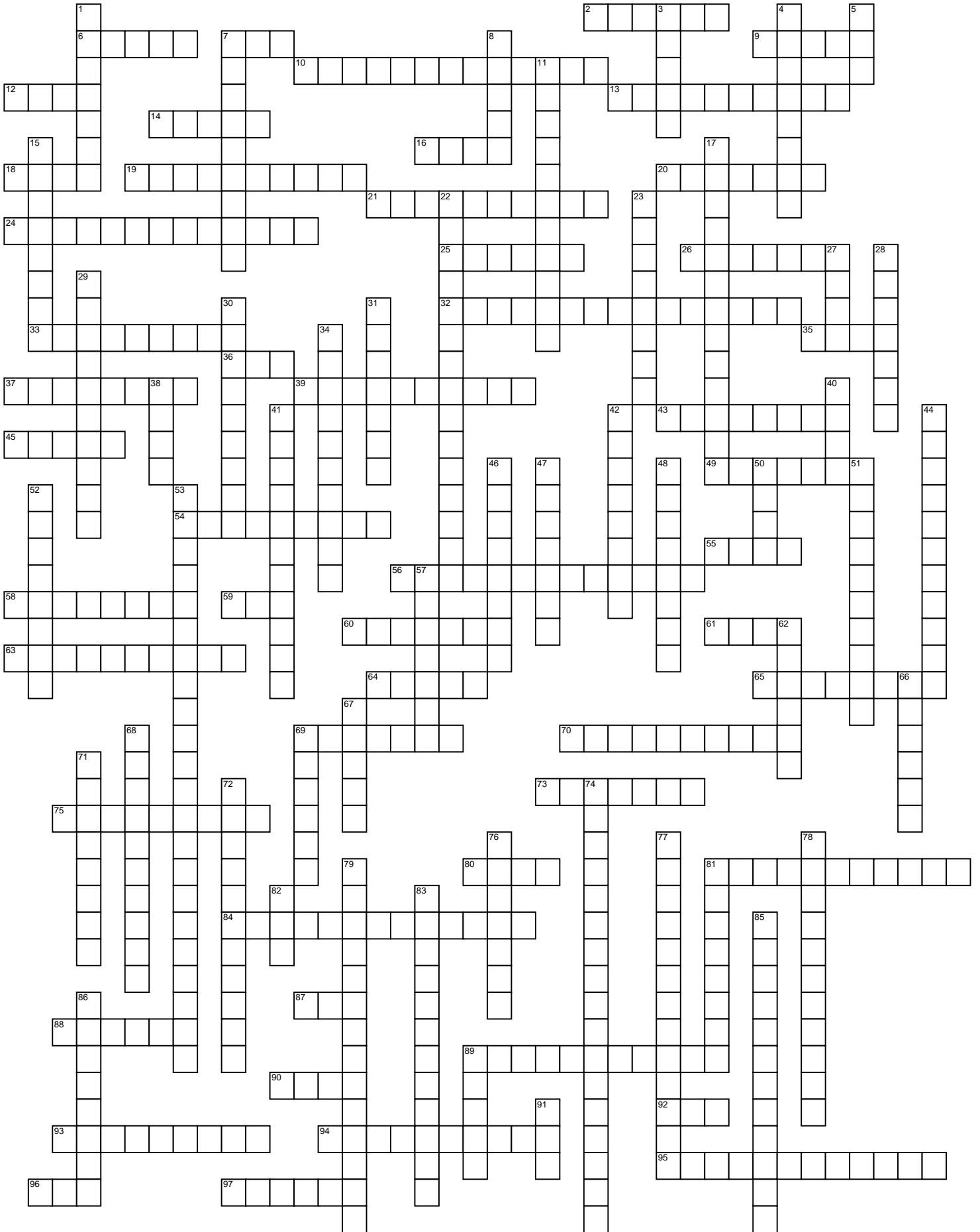


Six Sigma Black Belt Crossword



ACROSS

- 2 A Kappa of zero indicates that the agreement is the same as expected by _____
- 6 The _____ is the distance between the extreme values of a data set, Highest - Lowest
- 7 A systematic series of tests in which various Input Variables (X's) are directly manipulated and the effects on the Output Variables (Y's) are observed (acronym)
- 9 Continuous variable data is a set of numbers that can potentially take on any _____
- 10 A process can be in statistical control and not capable of consistently producing good output within _____ limits
- 12 Kaizen can also be referred to as a _____ DMAIC
- 13 Xbar-R Charts are a way of _____ variables data
- 14 Second Law of Lean Six Sigma: The Law of _____
- 16 A structured approach to identifying the areas and ways in which a process or system can fail
- 18 If we measure process performance over time, many processes tend to follow a Normal Distribution or _____ shaped curve
- 19 Attribute and Ordinal measurements rely on _____ classifications or ratings
- 20 The output of a process
- 21 If a system is measured using an Ordinal Scale then _____ Correlation should be used
- 24 Xbar Chart shows changes in the average value of the process and is a _____ of the "Longer-Term Variation"
- 25 _____ Charts are a type of bar chart in which the horizontal axis represents categories of interest, rather than a continuous scale
- 26 20% of activities cause 80% of delays in a given _____
- 32 The variation in the average of the measurements made by different operators using the same measuring instrument when measuring the identical characteristic on the same part
- 33 Recognize, Define, Measure, Analyze, Improve, Control, Pre-Replication, Replication and Realization (RDMAICRR) are the Project _____
- 35 Speed + Low Cost + Flexibility is used to describe this
- 36 The I-MR chart (or XmR) is used when you are learning about a process with _____ data points and when sampling is very expensive
- 37 Attribute data can be thought of as having two main subsets, Binary Data and _____ Variable
- 39 ANOVA separates the total variation in the data into the _____ by calculating variances rather than ranges
- 43 Degrees of Freedom equals _____ in statistics, we earn a degree of freedom for every data point we collect and spend a degree of freedom for each parameter we estimate
- 45 The term Sigma is a _____ letter (s) used to describe variability and is an indicator of how likely errors are to occur
- 49 Analysis of Variance (ANOVA) is a

- statistical technique used to compare whether _____ are drawn from populations that have the same mean (average), or whether the population means are significantly different
- 54 R Chart: a look at _____, displays changes in the 'within' subgroup dispersion of the process. Often called "Short-Term Variation", must be "in control" before we can build or use the Xbar chart
- 55 The Xbar-R Chart is used with a sampling plan to monitor repetitive processes. The sub-group sizes are from two to _____ items
- 56 Compensate, correct, prevent are types of this (2 words)
- 58 This company was the first to advocate Six Sigma in the 1980's
- 59 This indicates capability against a Lower Specification Limit
- 60 A _____ hierarchy is a sampling strategy that takes advantage of a hierarchical structure in the process similar to a family tree
- 61 Develop new processes/ products that are capable (acronym)
- 63 The Xbar-R Chart is used with a sampling plan to monitor _____ processes. The sub-group sizes are from 2 to 9 items
- 64 Six Sigma is outwardly focused on the _____ of the Customer, inwardly focused on using statistical tools on projects that yield high return on investment
- 65 Width, diameter, temperature, weight, time, etc. are examples of _____ data
- 69 Our ability to assess the performance of a process we wish to improve is only as good as our ability to _____ it
- 70 Attribute/ordinal measurement systems utilize accept/reject criteria or ratings (such as 1 - 5) to determine if an _____ level of quality has been attained
- 73 _____ data scale contains numbers that have no basis by which they could be arranged in any order, nor can one make out any quantitative difference between them
- 75 The t-distributions comprise a family of distributions with one extra _____ ("degrees of freedom" or df, where df = sample size -1)
- 80 Multi-Vari Charts: Displays up to _____ sources of variation on one plot
- 81 A measure of linear association between two variables
- 84 The variation between successive measurements of the same part, same characteristic, by the same person using the same equipment (gage)
- 87 Where feasible, the objective for replication is to develop solutions that produce a Solution in a _____
- 88 This is calculated by listing the data in ascending order, and then finding the value that is in the middle of the list
- 89 Full factorials examine every possible _____ of factors at the levels tested
- 90 The Control Chart family can be broken into two groups based on the type of _____ we are charting: Continuous/Variable and Attribute/Discrete
- 92 The distance between the Third Quartile Line and the First Quartile Line of a Boxplot (acronym)
- 93 The number of observations in each interval are counted and their frequency plotted as the height of each

- bar in a _____
- 94 We estimate the population parameters with sample _____
- 95 _____ variation is not random and changes over time. It is a local workforce issue and can be handled by the workers involved in the process if they have the proper tools and operating environment (2 words)
- 96 The probability that a product will pass through the entire process without rework and without any defects (acronym)
- 97 A controlled or uncontrolled input variable

DOWN

- 1 _____ data scale contains numbers that can be ranked. This scale, however, cannot make an inference about the degree of difference between the numbers
- 3 Factors that are uncontrollable, difficult or too costly to control, or preferably not controlled
- 4 Average Squared Deviation of each data point from the Mean
- 5 The Xbar-S Chart is used with larger sample groups of _____ or more items
- 7 The Replication Package is the plan for replication developed by the Pilot Black Belt. The package is a set of _____ which transfers the knowledge of the pilot site to the replicating
- 8 _____ is an easy method to test how repeatable and reproducible a subjective measurement system is
- 11 This occurs when the effect of one factor on the response depends on the setting of another factor
- 15 The difference between predicted and actual values
- 17 These can tell us: When the process mean has shifted, process variability has changed, special causes are present or not (2 words)
- 22 The manipulation of controllable factors (independent variables) at different levels to see their effect on some response (dependent variable)
- 23 Precision + Accuracy + VOC is used to describe this (2 words)
- 27 The 2-Sample t Test is used to test whether or not the means of two samples are the _____
- 28 Six Sigma provides the _____ platform for improvement
- 29 Although OFAT may simplify the analysis of results, the experimental _____ given up is significant
- 30 Six Sigma Quality Level is said to equate to 3.4 PPM _____
- 31 A graph used to visualize both the median and the range of a process and allow for easy graphical comparison of multiple data sets
- 34 One of the most commonly used attribute charts is the P-Chart, which plots _____ defective
- 38 The null hypothesis is a statement you are testing in order to determine whether or not that statement is _____
- 40 The difference between Repeats and Replicates is the _____ of variation each is capturing
- 41 First Law of Lean Six Sigma: The Law of _____
- 42 A formal event that the project must pass through at each phase of the project
- 44 _____ variation is random, stable, and consistent over time (2

- words)
- 46 A measure of how unusual an X value is
- 47 For _____ products and systems, Six Sigma is necessary to produce or perform defect-free more than 90% of the time
- 48 Positional, sequential and _____ are the three families of noise
- 50 This is a measurement of central tendency, that is, where the "center" of most of the data is
- 51 Multi-Vari studies determine whether major variation is positional, _____, temporal or due to continuous inputs
- 52 According to Deming, eighty-five percent of the reasons for failure to meet customer expectations are related to deficiencies in systems and process...rather than the _____
- 53 Poor attribute measurement systems can almost always be traced to poor _____ (2 words)
- 57 Data point that is statistically unlikely
- 62 Data _____ are a method to represent the value of a variable
- 66 The Xbar-S Chart is used with _____ sample groups of 10 or more items
- 67 DOE is a key tool for establishing _____ and effect
- 68 The Standard Deviation is the _____ of the Variance (2 words)
- 69 Zeroeth Law of Lean Six Sigma: The Law of the _____
- 71 A Force-Field _____ is a tool to assist in examining the driving and restraining forces of change that will impact a situation
- 72 Repeatability, reproducibility, bias, discrimination, stability: The language of _____
- 74 Sometimes the X's are correlated (pairwise and more complex linear relationships), this condition is known as _____
- 76 An R Chart must be in _____ before we can build or use the Xbar chart
- 77 These are not related to standards! Nor are they specifications. They are a measure of what the process is doing/has done (2 words)
- 78 To take the Pilot solution and implement the clearly defined non-negotiables in every zone
- 79 They do not create data that does not already exist or analyze data (2 words, plural)
- 81 Six Sigma is a top-down program with executive and _____ support
- 82 This is the index used when a process has a "two-sided" specification
- 83 A collection of data forms a _____
- 85 Long-term sigma is determined by subtracting 1.5 sigma from our short-term sigma calculation to account for the _____ that is known to occur over time (2 words)
- 86 Third Law of Lean Six Sigma: The Law of _____
- 89 There is an optimum quality level beyond which the _____ of quality improvement exceed the expected cost savings from a reduced number of defects (plural)
- 91 Gage R&R and Audit (Sampling Validation) are types of this, the objective is to ensure that data used in the analyze phase is valid and reliable (acronym)

Six Sigma Black Belt Crossword

Solution:

The crossword puzzle contains the following words:

- Across:**
 - 1: RANGE
 - 3: SPECIFICATION
 - 5: DISPLAYING
 - 7: SUBJECTIVE
 - 9: INTERCLASS
 - 11: VISUALIZATION
 - 13: FEW
 - 15: COMPONENTS
 - 17: GREEK
 - 19: PRECISION
 - 21: CONTROL ACTION
 - 23: NESTING
 - 25: VOICE
 - 27: MEASURE
 - 29: ACCEPTABLE
 - 31: NOMINAL
 - 33: CORRELATION
 - 35: HISTOGRAM
 - 37: STATISTICS
 - 39: FACTOR
- Down:**
 - 2: O
 - 4: DOE
 - 6: MINI
 - 8: FOCUS
 - 10: REPRODUCIBILITY
 - 12: DISCRETE
 - 14: BOX
 - 16: ERECT
 - 18: REPEATABILITY
 - 20: CYCLE
 - 22: BOX
 - 24: CONTROL
 - 26: LEAN
 - 28: MARK
 - 30: VARIABLE
 - 32: FOUR
 - 34: SPECIAL CAUSE
 - 36: T
 - 38: ON
 - 40: S