

QUESTIONS:

- 1. You've been tasked with improving a process, and you want to establish the current state value stream map. Which phase of the DMAIC process are you in?**
 - Define
 - Measure
 - Analyze
 - Improve

- 2. What focus area of six sigma is unique to six sigma and one of the primary reasons for its success and popularity over the last 40 years?**
 - Its focus on waste and flow
 - Its focus on employee empowerment and involvement
 - Its focus on business results
 - Its focus on customer satisfaction

- 3. You've been tasked with making an improvement to the warehouse operation to improve the flow of material into the production room. You make an improvement to re-arrange the way material is stored to optimize the flow of material from the receiving dock onto the production floor. A few weeks after implementation you learn that your new change has caused major problems for the receiving team. This mistake is an example of what:**
 - Design Error
 - Local Optimization
 - Waste
 - Excess Variation

- 4. The primary conclusion that we should make when thinking about the Taguchi loss function is what?**
 - Quality Loss only increase when a product is no longer within specifications
 - Quality Loss begins whenever a product is away from nominal, even if it's still within specification
 - Quality cannot be improved without increasing cost
 - Variation within specification does not affect cost

- 5. You've been tasked with improving a process, and you've executed an experiment and you're working through the ANOVA analysis to identify the critical input factors that are having an effect on the yield of the process. Which phase of the DMAIC process are you in?**
 - Define
 - Measure
 - Analyze
 - Improve

6. You've been tasked with improving a process, and you've recently implemented a change that has had a positive outcome. You want to make sure this change is sustained over time, and so you're in the process of creating a control plan to capture the recent change. Which phase of the DMAIC process are you in?
- Measure
 - Analyze
 - Improve
 - Control
7. You've been tasked with improving a process, and you're collecting data to calculate the current state process capability associated with your process. Which phase of the DMAIC process are you in?
- Measure
 - Analyze
 - Improve
 - Control
8. You've been tasked with improving a process, and you've identified that variation in your equipment tooling is causing variation within your process that's resulting in yield loss. You're in the process of adding an alignment feature to your tooling to mistake-proof the process. Which phase of the DMAIC process are you in?
- Measure
 - Analyze
 - Improve
 - Control
9. You've been tasked with improving a process, and you're assessing the existing measurement systems through a gauge R&R to ensure that the variation within that measurement system is appropriate. Which phase of the DMAIC process are you in?
- Define
 - Measure
 - Analyze
 - Improve
10. You're working on an improvement team for a major process, and you want to create a high-level overview of that process that includes the inputs, outputs and customer, which tool would be the best in this situation
- VOC Analysis
 - Flow Diagram
 - Affinity Diagram
 - SIPOC Diagram

SOLUTIONS:

1. You've been tasked with improving a process, and you want to establish the current state value stream map. Which phase of the DMAIC process are you in?

- **Define**
- Measure
- Analyze
- Improve

Establishing the current state value stream map falls under the **Define** phase of DMAIC.

2. What focus area of six sigma is unique to six sigma and one of the primary reasons for its success and popularity over the last 40 years?

- Its focus on waste and flow
- Its focus on employee empowerment and involvement
- **Its focus on business results**
- Its focus on customer satisfaction

Six sigma is unique in its focus on business results. Waste and flow is the primary focus of lean, and the focus on customer satisfaction and employee empowerment is not unique to six sigma.

3. You've been tasked with making an improvement to the warehouse operation to improve the flow of material into the production room. You make an improvement to re-arrange the way material is stored to optimize the flow of material from the receiving dock onto the production floor. A few weeks after implementation you learn that your new change has caused major problems for the receiving team. This mistake is an example of what:

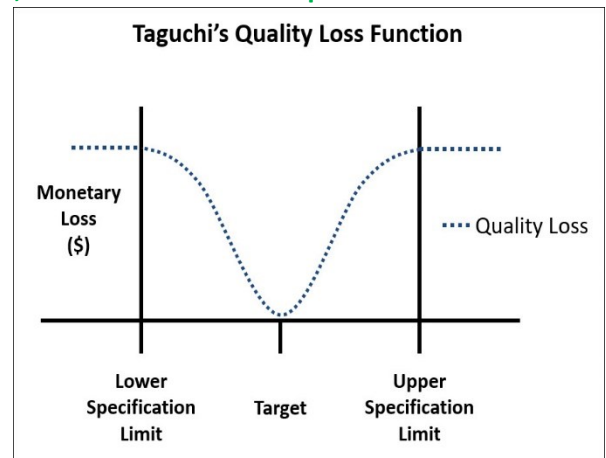
- Design Error
- **Local Optimization**
- Waste
- Excess Variation

In **local optimization**, a change is made that benefits one portion of your value stream, but ends up having a negative, unintended consequence to another portion of your value stream that negates the value of the change you made. This can be avoided by focusing on the whole value stream when making changes.

4. The primary conclusion that we should make when thinking about the Taguchi loss function is what?

- Quality Loss only increase when a product is no longer within specifications
- **Quality Loss begins whenever a product is away from nominal, even if it's still within specification**
- Quality cannot be improved without increasing cost
- Variation within specification does not affect cost

You can see in the Taguchi loss function below that the monetary loss (Quality Loss) begins whenever a product moves away from nominal (even if it is still in specification).



5. You've been tasked with improving a process, and you've executed an experiment and you're working through the ANOVA analysis to identify the critical input factors that are having an effect on the yield of the process. Which phase of the DMAIC process are you in?

- Define
- Measure
- **Analyze**
- Improve

In the **Analyze** phase of DMAIC is when we would perform ANOVA Analysis to identify critical factors.

6. You've been tasked with improving a process, and you've recently implemented a change that has had a positive outcome. You want to make sure this change is sustained over time, and so you're in the process of creating a control plan to capture the recent change. Which phase of the DMAIC process are you in?

- Measure
- Analyze
- Improve
- **Control**

In the **Control** phase of DMAIC is when we would create a control plan to ensure a change is sustained over time.

7. You've been tasked with improving a process, and you're collecting data to calculate the current state process capability associated with your process. Which phase of the DMAIC process are you in?

- **Measure**
- Analyze
- Improve
- Control

In the **Measure** phase of DMAIC is when we would collect data to calculate the current state process capability of our process.

8. You've been tasked with improving a process, and you've identified that variation in your equipment tooling is causing variation within your process that's resulting in yield loss. You're in the process of adding an alignment feature to your tooling to mistake-proof the process. Which phase of the DMAIC process are you in?

- Measure
- Analyze
- **Improve**
- Control

In the **Improve** phase of DMAIC is when you would add mistake-proofing tools like alignment features to equipment to eliminate a source of variation.

9. You've been tasked with improving a process, and you're assessing the existing measurement systems through a gauge R&R to ensure that the variation within that measurement system is appropriate. Which phase of the DMAIC process are you in?

- Define
- **Measure**
- Analyze
- Improve

In the **Measure** phase of DMAIC is when we would assess the variation of our existing measurement system.

10. You're working on an improvement team for a major process, and you want to create a high-level overview of that process that includes the inputs, outputs and customer, which tool would be the best in this situation

- VOC Analysis
- Flow Diagram
- Affinity Diagram
- **SIPOC Diagram**

A **SIPOC Diagram** is a great tool to help you define your process, including the Suppliers, Inputs, Process steps, Output and Customers