Six Sigma Green Belt

Exam Prep: Flashcards Series

Master the core concepts, tools, and methodologies you need to pass your Six Sigma Green Belt certification exam. Each flashcard presents a question on one side and the answer on the other — covering DMAIC phases, Lean principles, statistical tools, team roles, and more.

50 Cards
Comprehensive coverage
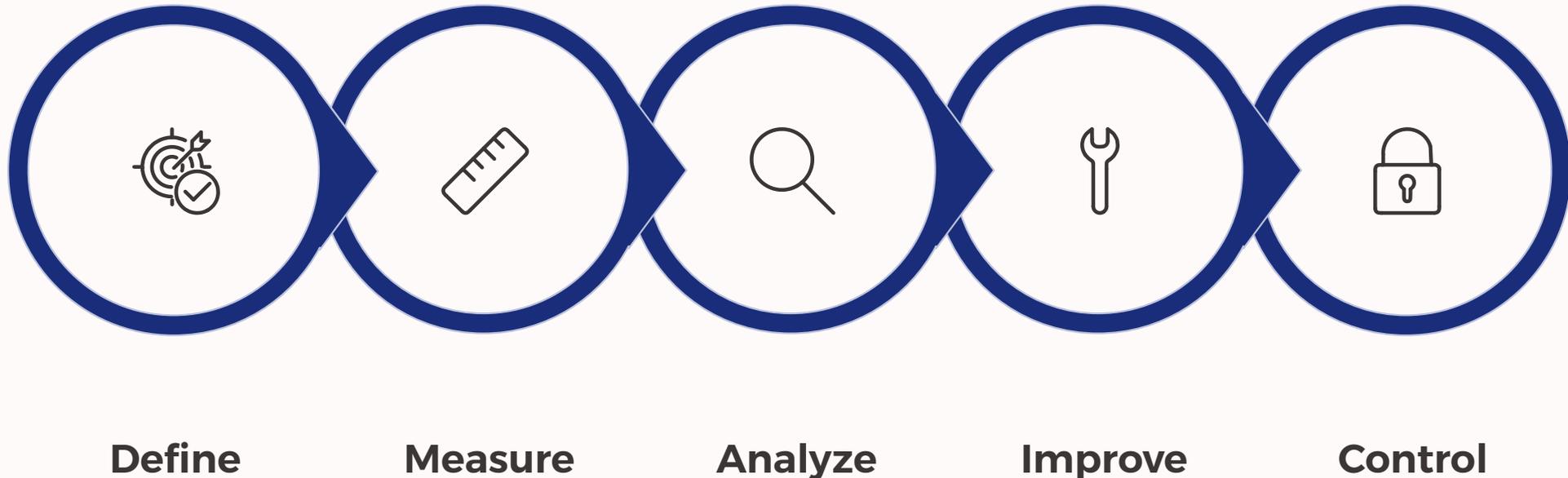
5 Domains
DMAIC phases covered

Key Tools
Charts, maps & methods

Exam Ready
Test your knowledge

Management and Strategy Institute

What are the five phases of DMAIC?

Define, Measure, Analyze, Improve, Control

Define   **Measure**   **Analyze**   **Improve**   **Control**

DMAIC is the backbone of every Six Sigma project. Each phase builds on the previous one, creating a structured and disciplined approach to problem-solving. Remember the order — it's not just an acronym, it's a roadmap from problem identification through sustainable results. The Define phase scopes the project, Measure establishes baselines, Analyze identifies root causes, Improve implements solutions, and Control ensures gains are maintained over time.

What is the primary goal of Six Sigma?

To reduce process variation and defects to improve quality

Six Sigma is fundamentally about **consistency**. By minimizing variation in processes, organizations can deliver products and services that reliably meet customer expectations. The name "Six Sigma" itself refers to a statistical target: a process that produces no more than 3.4 defects per million opportunities.

Reduce Variation

Eliminate inconsistency in process outputs

Reduce Defects

Move toward zero-defect production

Improve Quality

Deliver consistent customer value

What does CTQ stand for and why is it important?

Critical to Quality — it identifies key measurable characteristics important to customers

CTQ trees translate broad customer needs into specific, measurable requirements. They bridge the gap between what customers say they want (Voice of the Customer) and what teams must actually measure and control in a process.

Why it matters for your exam: CTQs are established during the **Define phase** and directly influence what gets measured in the Measure phase. Without well-defined CTQs, a project risks solving the wrong problem.

CTQ Example

Customer Need: "Fast delivery"

CTQ: Order delivered within 2 business days

Metric: % of orders meeting 2-day threshold

What is a Project Charter in Six Sigma?

> **A document that defines the project scope, goals, team, and timeline**

The Project Charter is created in the **Define phase** and serves as the project's "contract." It aligns stakeholders, sets expectations, and provides a reference point throughout the DMAIC process. A well-written charter prevents scope creep and keeps the team focused.

1	2
Problem Statement	**Goal Statement**
What is wrong and what is the impact?	Specific, measurable improvement target

3	4
Scope & Boundaries	**Team & Timeline**
What is in and out of scope?	Key roles, milestones, and deadlines

Name three key roles in a Six Sigma project team.

Team Leader, Subject Matter Expert, Team Champion

Team Leader

Drives day-to-day project execution, coordinates team activities, and ensures deliverables are met on schedule. Often a Green Belt or Black Belt.

Subject Matter Expert

Provides deep domain knowledge about the process under study. Helps the team understand nuances that data alone may not reveal.
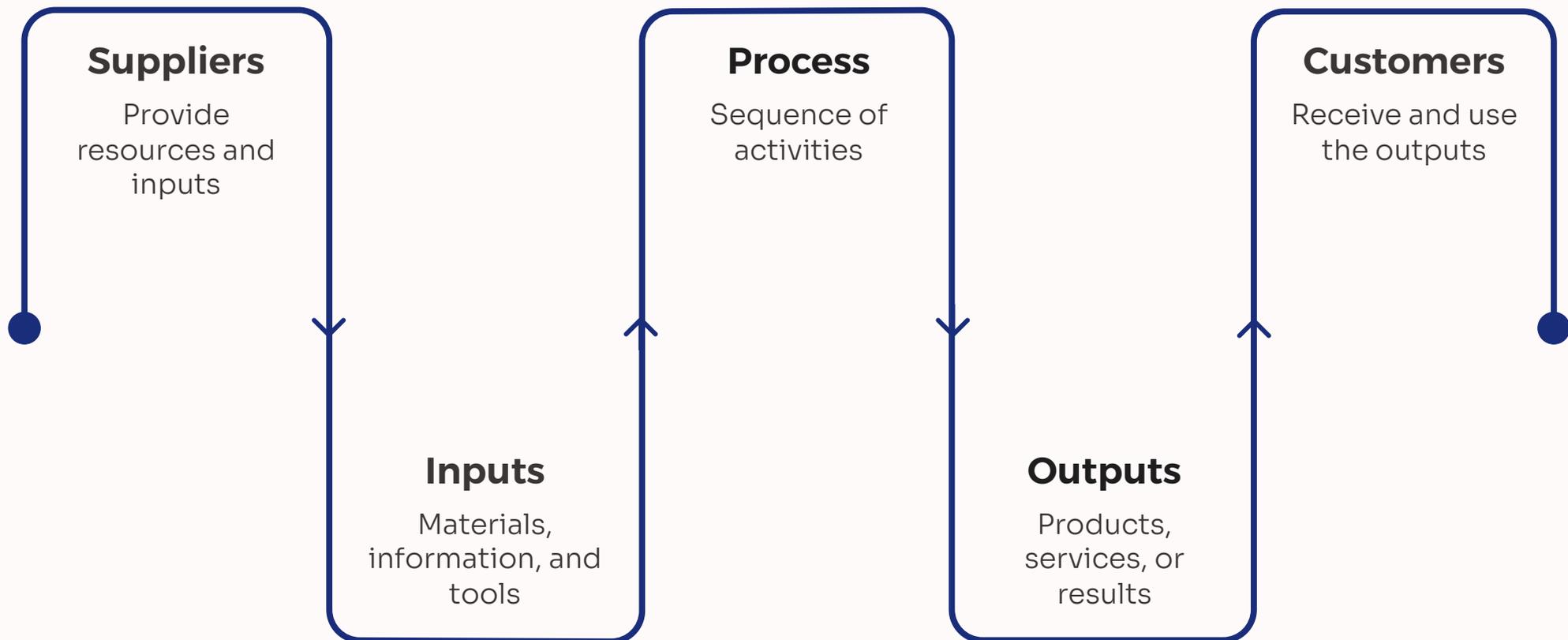
Team Champion

A senior leader who sponsors the project, removes organizational barriers, secures resources, and ensures strategic alignment.

What is SIPOC and what does it stand for?

A high-level process mapping tool: **Suppliers, Inputs, Process, Outputs, Customers**

Suppliers
Provide resources and inputs

Process
Sequence of activities

Customers
Receive and use the outputs

Inputs
Materials, information, and tools

Outputs
Products, services, or results

SIPOC is typically one of the first tools used in the **Define phase**. It gives the team a 30,000-foot view of the process before diving into detailed mapping. Think of it as the "elevator pitch" for how a process works — who supplies what, what happens, and who benefits from the result.

DEFINE PHASE

What is the purpose of the Define phase?

Identify the problem, project goals, and customer requirements

1	2	3

Identify Problem

Articulate what's wrong and its business impact

Set Goals

Establish measurable targets for improvement

Understand Customer

Capture VOC and translate to CTQs

The Define phase answers the fundamental question: *"What problem are we solving and for whom?"* Key deliverables include the Project Charter, SIPOC diagram, and CTQ definitions. A strong Define phase prevents wasted effort in later phases by ensuring the team is focused on the right problem.

What is VOC and how is it used?

Voice of the Customer — used to capture customer needs and expectations

VOC Collection Methods

- Surveys and questionnaires
- Customer interviews
- Focus groups
- Complaint and feedback analysis
- Market research data

VOC → CTQ Flow

1. Gather raw customer feedback

2. Translate into customer needs

3. Define CTQ characteristics

4. Set measurable specifications

VOC is the starting point of every customer-focused Six Sigma project. Without it, teams risk optimizing for internal metrics that don't actually matter to the customer.

What types of data are collected in the Measure phase?

Baseline process performance data, defect rates, and process capability metrics

Baseline Performance

Establish the current state — how is the process performing today? This becomes the benchmark against which all improvements are compared.

Defect Rates

Count and categorize defects using metrics like DPU (Defects Per Unit) or DPMO. These quantify the size of the problem.

Process Capability

Calculate Cp and Cpk to determine if the process can consistently meet specification limits. This reveals the process's inherent ability.

Exam Tip: The Measure phase is about *quantifying* the current state — you can't improve what you haven't measured.

STATISTICAL TOOL

What is a Control Chart used for?

> **Monitoring process stability and detecting variation over time**

Control charts are one of the most important tools in Six Sigma. They plot data points over time with a center line (mean) and upper/lower control limits (UCL/LCL), typically set at ±3 standard deviations from the mean.

UCL	**Center Line**	**LCL**
Upper Control Limit — signals upper boundary of expected variation	Process mean — the target value for stable performance	Lower Control Limit — signals lower boundary of expected variation

Key rule: Points within the limits = stable process. Points outside or patterns (runs, trends) = investigation needed.

What is the difference between common cause and special cause variation?

Common cause is **inherent** to the process; special cause is due to **specific, identifiable factors**

Common Cause Variation

- Random, natural process variation
- Always present — "built into" the system
- Requires fundamental process changes to reduce
- Example: Slight temperature fluctuations in a room

Special Cause Variation

- Assignable, non-random variation
- Occurs sporadically — something unusual happened
- Can be identified and eliminated directly
- Example: Machine breakdown causing defects

Exam Tip: A process with only common cause variation is "in statistical control." Special causes push the process out of control.

What is a Fishbone Diagram?

> **A cause–and–effect tool used to identify potential root causes of a problem**

Also called an **Ishikawa Diagram**, the Fishbone Diagram organizes brainstormed causes into categories. The problem (effect) sits at the "head" of the fish, while potential causes branch off as "bones."
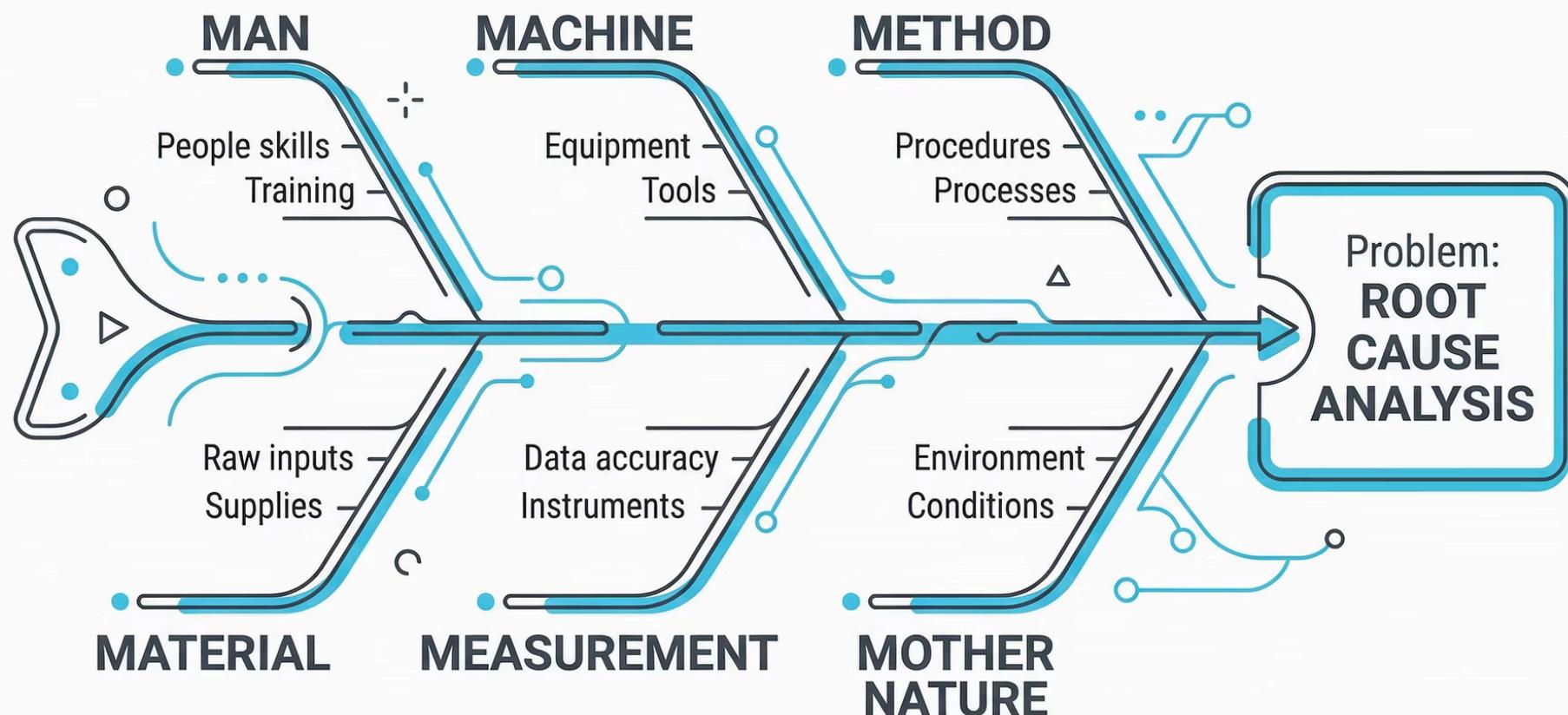
Memory Aid: The classic 6M categories are **Man, Machine, Method, Material, Measurement, Mother Nature**. Use these as a starting framework for brainstorming root causes.

What is the purpose of the Analyze phase?

> **To identify root causes of defects or process issues using data analysis**

The Analyze phase is where teams transition from *"What's happening?"* to *"Why is it happening?"* — using both statistical and qualitative tools to validate root causes.

01

Explore Potential Causes

Use Fishbone diagrams, 5 Whys, and brainstorming to generate hypotheses

02

Validate with Data

Apply hypothesis tests, regression analysis, and correlation studies

03

Prioritize Root Causes

Focus on the vital few causes that drive the majority of defects

04

Confirm Findings

Verify root causes with stakeholders and subject matter experts

What is a hypothesis test in Six Sigma?

A statistical method to determine if there is enough evidence to support a claim about a process

Key Components

- **Null Hypothesis (H_0):** Assumes no effect or difference
- **Alternative Hypothesis (H_1):** Claims there is an effect
- **p-value:** Probability of observing results if H_0 is true
- **Significance level (α):** Typically set at 0.05

Decision Rule

- If **p-value $< \alpha$** → Reject H_0 (evidence supports a difference)

- If **p-value $\geq \alpha$** → Fail to reject H_0 (insufficient evidence)

Common tests: t-test, chi-square, ANOVA, F-test

What is process capability (Cp and Cpk)?

Metrics that measure how well a process meets specification limits

Cp (Process Capability)

Measures the **potential** capability — how well the process *could* perform if it were perfectly centered between specification limits.

$$Cp = (USL - LSL) / (6\sigma)$$

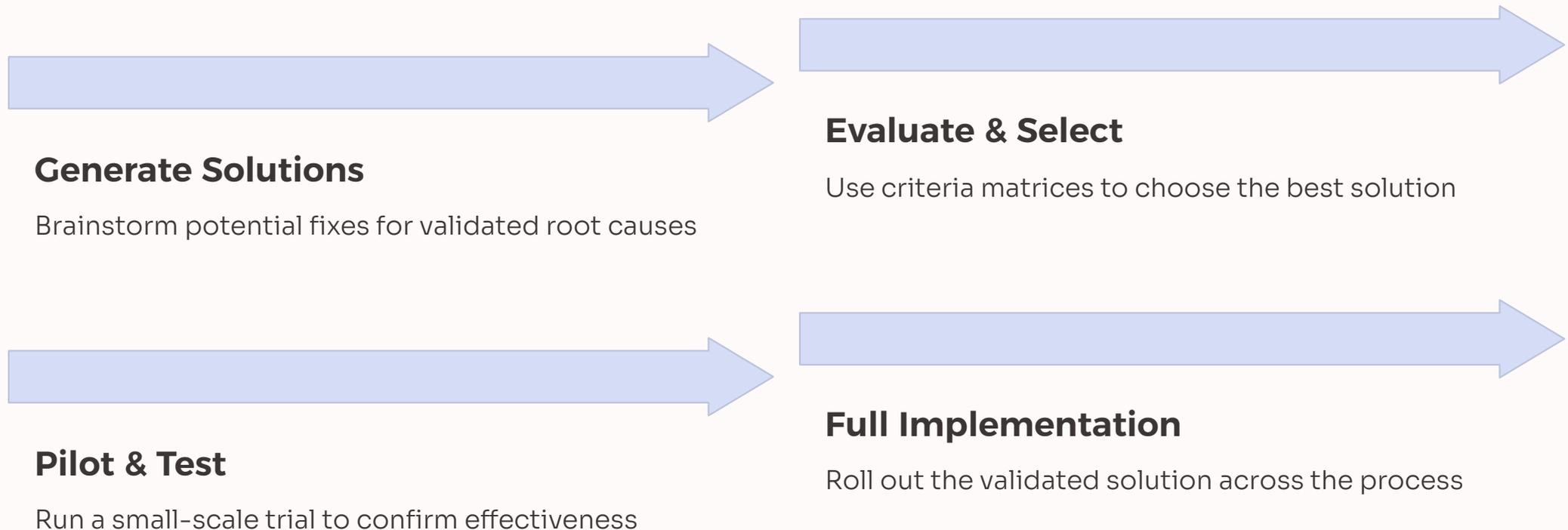### Cpk (Process Capability Index)

Measures the **actual** capability — accounts for how centered the process is. A process can have high Cp but low Cpk if the mean is shifted.

$$Cpk = \min[(USL - \mu) / 3\sigma, (\mu - LSL) / 3\sigma]$$

🗒 **Target:** Cp and Cpk ≥ 1.33 is generally considered "capable." A Cpk of 2.0 corresponds to Six Sigma performance.

What is the goal of the Improve phase?

Develop and implement solutions to eliminate root causes and improve the process

Generate Solutions

Brainstorm potential fixes for validated root causes

Evaluate & Select

Use criteria matrices to choose the best solution

Pilot & Test

Run a small-scale trial to confirm effectiveness

Full Implementation

Roll out the validated solution across the process

The Improve phase is where action happens. Teams move from analysis to implementation, ensuring solutions are data-driven — not based on gut feeling. Key tools include DOE, solution selection matrices, and pilot testing.

IMPROVE PHASE TOOL

What is a pilot test in Six Sigma?

A small-scale implementation of a solution to validate its effectiveness before full rollout

Why Pilot?

- Reduces risk of large-scale failure
- Identifies unforeseen issues early
- Builds stakeholder confidence
- Provides data to validate the solution

Pilot Best Practices

- Define clear success criteria before starting
- Select a representative sample or area
- Collect before-and-after data
- Document lessons learned
- Get stakeholder sign-off before full rollout

Exam Tip: Pilot testing bridges the gap between theoretical improvement and proven results. Never skip it — even when the solution seems obvious.

What is a Control Plan?

A documented approach to sustain improvements and monitor process performance

The Control Plan is the primary deliverable of the **Control phase**. It ensures that gains achieved during the Improve phase don't erode over time.

1

What to Monitor

Key process inputs and outputs tied to CTQs

2

How to Monitor

Control charts, checklists, audits, and dashboards

3

Response Plans

Clear actions when metrics go out of control

4

Ownership

Assigned roles responsible for ongoing monitoring

What is FMEA and why is it used?

> **Failure Modes and Effects Analysis** — used to identify and prioritize potential failure points

FMEA is a proactive risk assessment tool. It scores each potential failure mode based on three factors, then multiplies them to calculate a **Risk Priority Number (RPN)**.

Factor	What It Measures	Scale
Severity (S)	Impact if the failure occurs	1 (minor) to 10 (catastrophic)
Occurrence (O)	Likelihood the failure will happen	1 (rare) to 10 (very frequent)
Detection (D)	Ability to detect the failure before it reaches the customer	1 (easily detected) to 10 (undetectable)

📝 **RPN = S × O × D** — Higher RPN values indicate higher-priority risks that should be addressed first.

What is Lean Six Sigma?

A methodology combining Lean waste reduction and Six Sigma quality improvement tools

Lean

Focuses on **speed and efficiency** by eliminating waste (non-value-added activities). Core question: *"Does this step add value for the customer?"*

Six Sigma

Focuses on **quality and consistency** by reducing variation and defects. Core question: *"Is this process performing within specification?"*

Together, Lean Six Sigma delivers processes that are both **fast** (lean) and **accurate** (six sigma). Most modern Green Belt programs combine both approaches, and your exam will test knowledge across both disciplines.

What are the 8 wastes (TIMWOODS) in Lean?

Transportation, Inventory, Motion, Waiting, Overproduction, Overprocessing, Defects, Skills underutilized

Transportation
Unnecessary movement of materials

Inventory
Excess stock beyond demand

Motion
Unnecessary people movement

Waiting
Idle time between steps

Overproduction
Making more than needed

Overprocessing
Doing more work than required
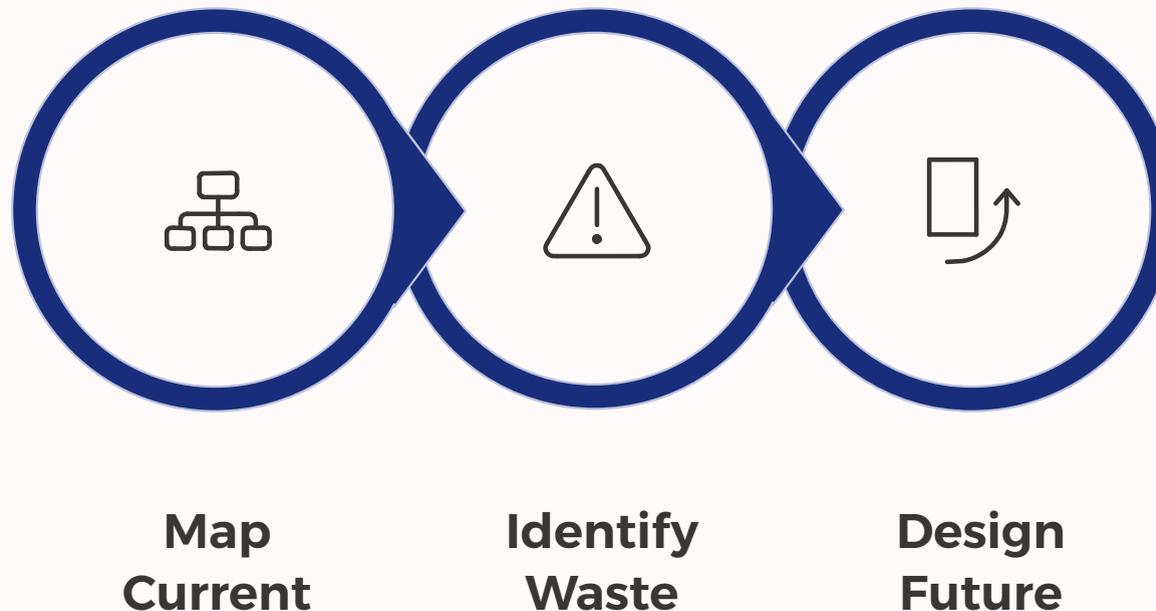
Defects
Errors requiring rework

Skills
Underutilized talent

LEAN TOOL

What is the purpose of a Value Stream Map?

To visualize the flow of materials and information to identify waste

Map Current

Identify Waste

Design Future

A Value Stream Map (VSM) captures the entire flow of a product or service from start to finish, including both **value-added** and **non-value-added** steps. It reveals where time, materials, and information get stuck or wasted.

Key elements of a VSM: process steps, cycle times, lead times, inventory levels, information flows, and a timeline showing value-added vs. non-value-added time.

What is takt time?

The rate at which a product must be completed to meet customer demand

Takt time sets the pace for production. It tells you how fast you need to produce one unit to keep up with demand — no faster, no slower.

> 🗒 **Takt Time = Available Production Time / Customer Demand**

Example: If you have 480 minutes of production time per day and customers demand 240 units, your takt time is **2 minutes per unit**.

Why It Matters

- Prevents overproduction
- Balances workload across stations
- Aligns production with demand
- Reveals bottlenecks when cycle time exceeds takt time

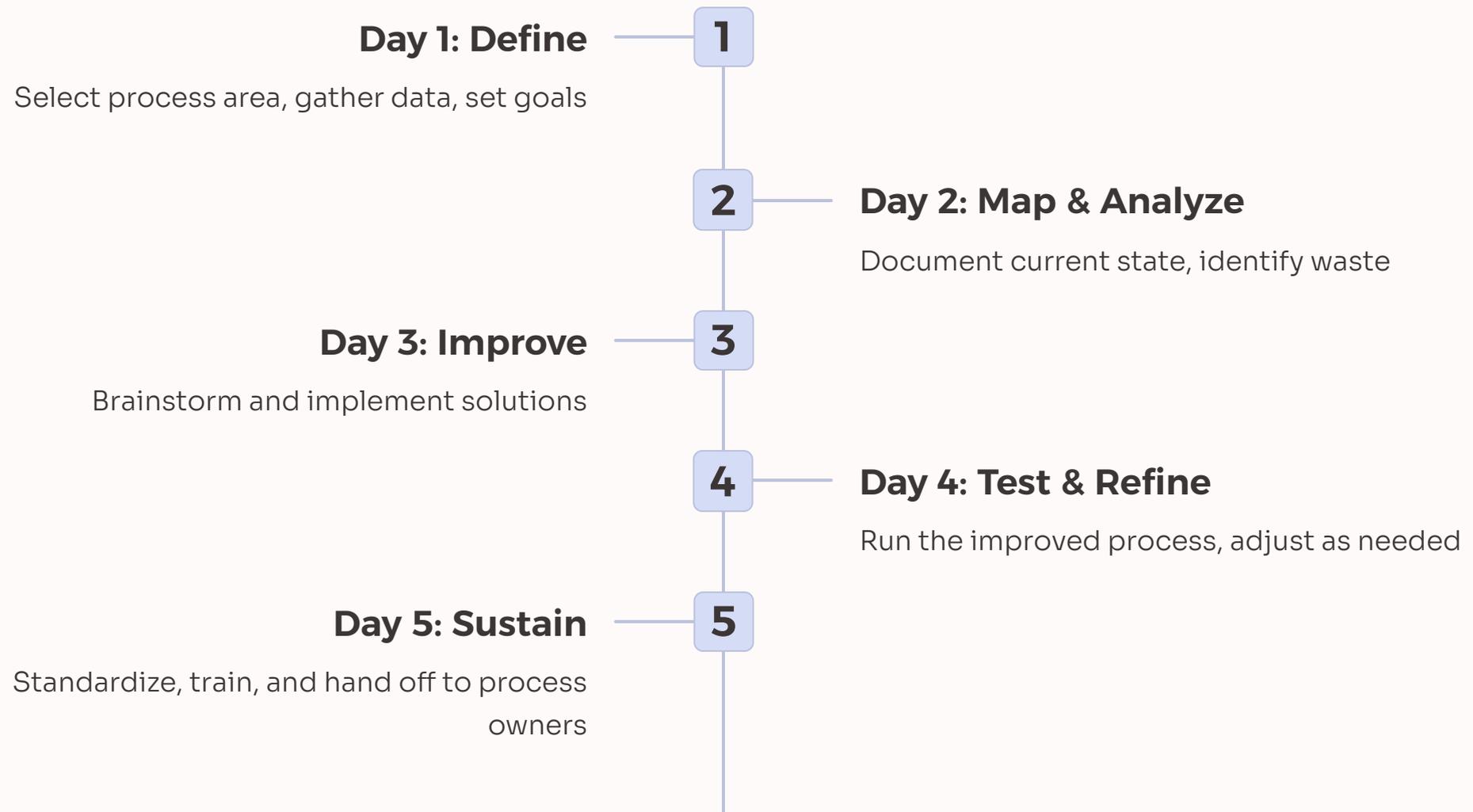# What is the difference between Lean and Six Sigma?

Lean focuses on **waste reduction**; Six Sigma focuses on **reducing variation and defects**

Dimension	Lean	Six Sigma
Primary Focus	Eliminate waste & increase speed	Reduce variation & defects
Core Question	"Does this add value?"	"Is this within specification?"
Key Tools	VSM, 5S, Kanban, Kaizen	DMAIC, Control Charts, DOE
Data Approach	Visual & qualitative	Statistical & quantitative
Speed of Change	Rapid, continuous events	Structured, project-based

Exam Tip: Modern organizations use both together as Lean Six Sigma, applying the right tool for the right problem.

LEAN TOOL

What is a Kaizen event?

A focused, short-term project to improve a specific process area

Day 1: Define — 1

Select process area, gather data, set goals

2 — **Day 2: Map & Analyze**

Document current state, identify waste

Day 3: Improve — 3

Brainstorm and implement solutions

4 — **Day 4: Test & Refine**

Run the improved process, adjust as needed

Day 5: Sustain — 5

Standardize, train, and hand off to process owners

"Kaizen" means *"change for the better"* in Japanese. Unlike lengthy DMAIC projects, Kaizen events typically span 3–5 days and produce immediate, tangible results.

What is the role of a Green Belt in Six Sigma?

Lead smaller projects and support Black Belts with data collection and analysis

Project Leadership

Green Belts lead improvement projects within their functional area, typically spending 25–50% of their time on Six Sigma activities while maintaining their regular job duties.

Black Belt Support

On larger, more complex projects, Green Belts serve as key team members — collecting data, performing analysis, and helping implement solutions under Black Belt guidance.
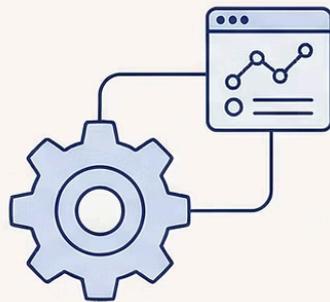
Tool Proficiency

Green Belts are expected to understand and apply core DMAIC tools, basic statistical analysis, process mapping, and root cause analysis techniques.

What is a Black Belt's role compared to a Green Belt?

Black Belts lead complex projects and mentor Green Belts; Green Belts manage smaller projects

GREEN BELT

Part-time involvement.
Leads smaller projects.
Basic statistical tools.
Works within department.

BLACK BELT

Full-time involvement.
Leads complex cross-functional projects.
Advanced statistical tools.
Mentors Green Belts & team members.

Key distinction: Black Belts are typically **full-time** Six Sigma practitioners, while Green Belts balance project work with their primary job responsibilities. Black Belts also have deeper statistical expertise, including DOE and advanced regression analysis.

What is the significance of DPMO?

Defects Per Million Opportunities — a measure of process quality

DPMO normalizes defect counts so you can compare processes of very different scales and complexities. A simple product with 1 opportunity per unit and a complex product with 100 opportunities per unit can be compared on equal footing.

> 📑 **DPMO = (Number of Defects × 1,000,000) / (Number of Units × Opportunities per Unit)**

Sigma Level Reference

1σ = 691,462 DPMO

2σ = 308,538 DPMO

3σ = 66,807 DPMO

4σ = 6,210 DPMO

5σ = 233 DPMO

6σ = 3.4 DPMO

CORE CONCEPT

What is the Six Sigma quality level in terms of DPMO?

Approximately 3.4 defects per million opportunities

3.4
DPMO
The gold standard of process quality

99.99966%
Yield
Percentage of defect-free output

6σ
Sigma Level
Six standard deviations from the mean

Achieving Six Sigma means your process is so well-controlled that only 3.4 out of every million opportunities will result in a defect. This includes a **1.5σ shift** — the assumption that processes drift over time. Without the shift, a true 6σ process would have only 0.002 DPMO.

What is the purpose of a Pareto Chart?

> **To identify the most significant factors contributing to a problem (80/20 rule)**

The Pareto Principle states that roughly **80% of effects come from 20% of causes**. A Pareto Chart is a special bar chart that displays categories in descending order of frequency with a cumulative line overlay, making it easy to see which few causes account for most of the problem.

■ Frequency   — Cumulative %

Cumulative %
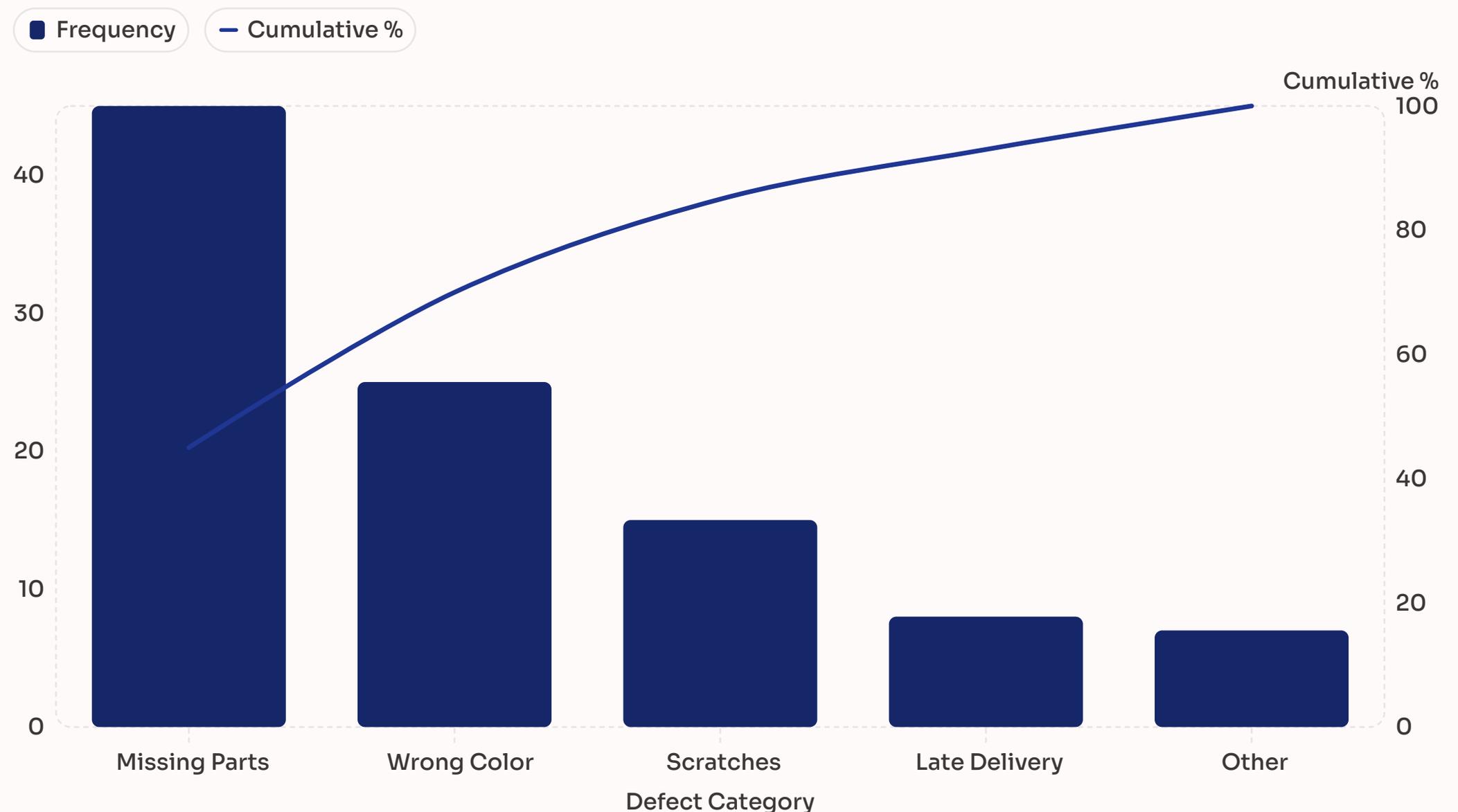
Defect Category

Exam Tip: Focus improvement efforts on the "vital few" — the leftmost bars that drive most defects.

What is the difference between attribute and variable data?

Attribute data is **categorical** (pass/fail); variable data is **measurable** (length, time)

Attribute Data (Discrete)

- Counted — whole numbers only
- Categories: yes/no, pass/fail, good/bad
- Examples: number of defects, number of late deliveries
- Charts: p-chart, np-chart, c-chart, u-chart

Variable Data (Continuous)

- Measured — any value on a continuous scale
- Characteristics: length, weight, temperature, time
- Examples: cycle time in seconds, diameter in mm
- Charts: X-bar/R chart, I-MR chart

Why it matters: The type of data determines which statistical tools and control charts you use. Variable data provides more information per data point and requires smaller sample sizes.

What is a Control Chart's UCL and LCL?

Statistical boundaries that indicate process variation limits

Understanding the Limits

The **Upper Control Limit (UCL)** and **Lower Control Limit (LCL)** are typically set at **±3 standard deviations** from the process mean. They represent the natural boundaries of a stable process.

These are *not* specification limits — they describe what the process **is doing**, not what it **should** be doing.
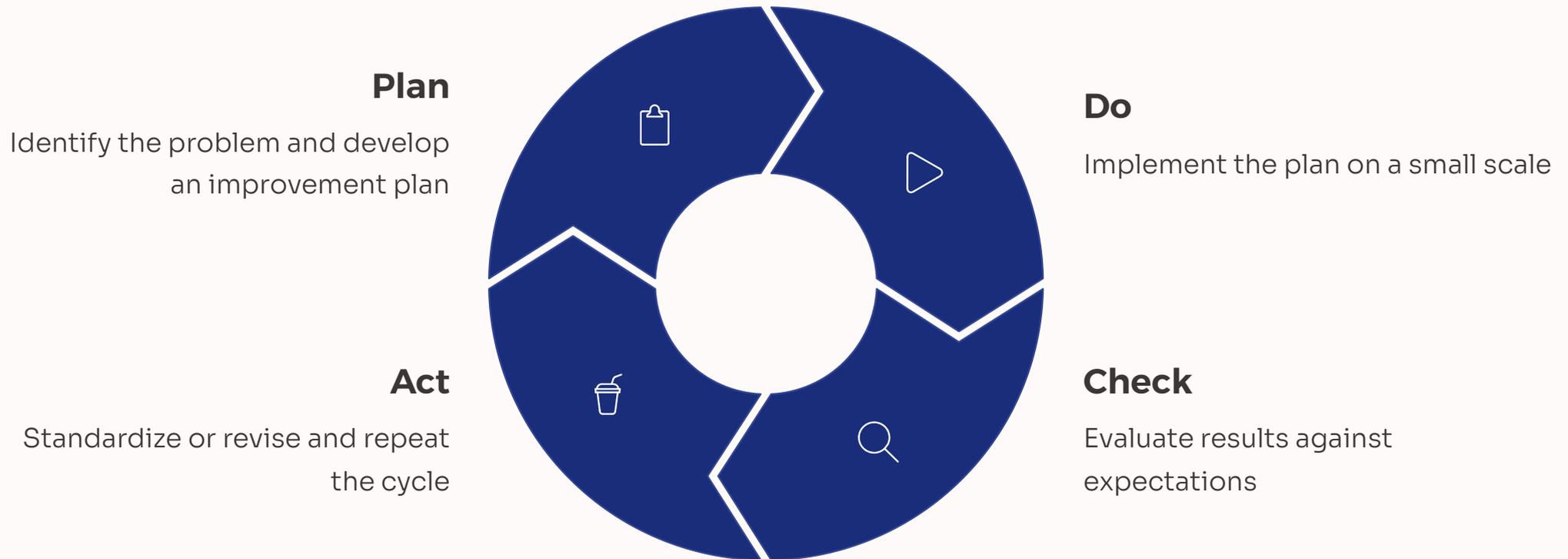
Out-of-Control Signals

- Single point beyond UCL or LCL
- Run of 7+ points on one side of the mean
- Trending pattern (6+ points increasing/decreasing)
- 2 of 3 points in the outer third zone

These are known as the Western Electric rules.

What is the PDCA cycle?

Plan, Do, Check, Act — a continuous improvement model

Plan

Identify the problem and develop an improvement plan

Do

Implement the plan on a small scale

Act

Standardize or revise and repeat the cycle

Check

Evaluate results against expectations

Also known as the **Deming Cycle** or **Shewhart Cycle**, PDCA is the foundation of continuous improvement. Unlike DMAIC, which is project-based, PDCA is designed for ongoing, iterative improvements. Many exam questions test the relationship between PDCA and DMAIC.

What is Design of Experiments (DOE)?

> **A structured method to determine the effect of multiple factors on a process output**

DOE is one of the most powerful tools in the Improve phase. Instead of testing one factor at a time (which is slow and misses interactions), DOE tests **multiple factors simultaneously** using a systematic experimental plan.

1	2
Select Factors Choose 2–4 key input variables to test (e.g., temperature, pressure, speed)	**Design the Experiment** Create a factorial design with high/low levels for each factor

3	4
Run & Collect Data Execute all experimental runs and measure the output	**Analyze Results** Identify main effects and interactions using statistical analysis

Exam Tip: DOE reveals both **main effects** (impact of individual factors) and **interaction effects** (how factors influence each other).

What is the purpose of a null hypothesis (H$_0$)?

The assumption that there is no effect or difference; tested for rejection

The Logic of Hypothesis Testing

We start by *assuming* nothing has changed (H$_0$ is true). Then we collect data and ask: *"Is this data so unlikely under H$_0$ that we should reject it?"*

Example

H$_0$: The new process has the same defect rate as the old process.
H$_1$: The new process has a different defect rate.
If p-value < 0.05, we reject H$_0$ and conclude there is a statistically significant difference.

Type I vs. Type II Errors

**Type I (α):** Rejecting H$_0$ when it's actually true (false positive).
Type II (β): Failing to reject H$_0$ when it's actually false (false negative).

PERFORMANCE METRIC

What is a process sigma level?

> **A measure of process performance expressed in standard deviations from the mean**

The process sigma level quantifies how many standard deviations fit between the process mean and the nearest specification limit. A higher sigma level means fewer defects and better performance.

Sigma Level
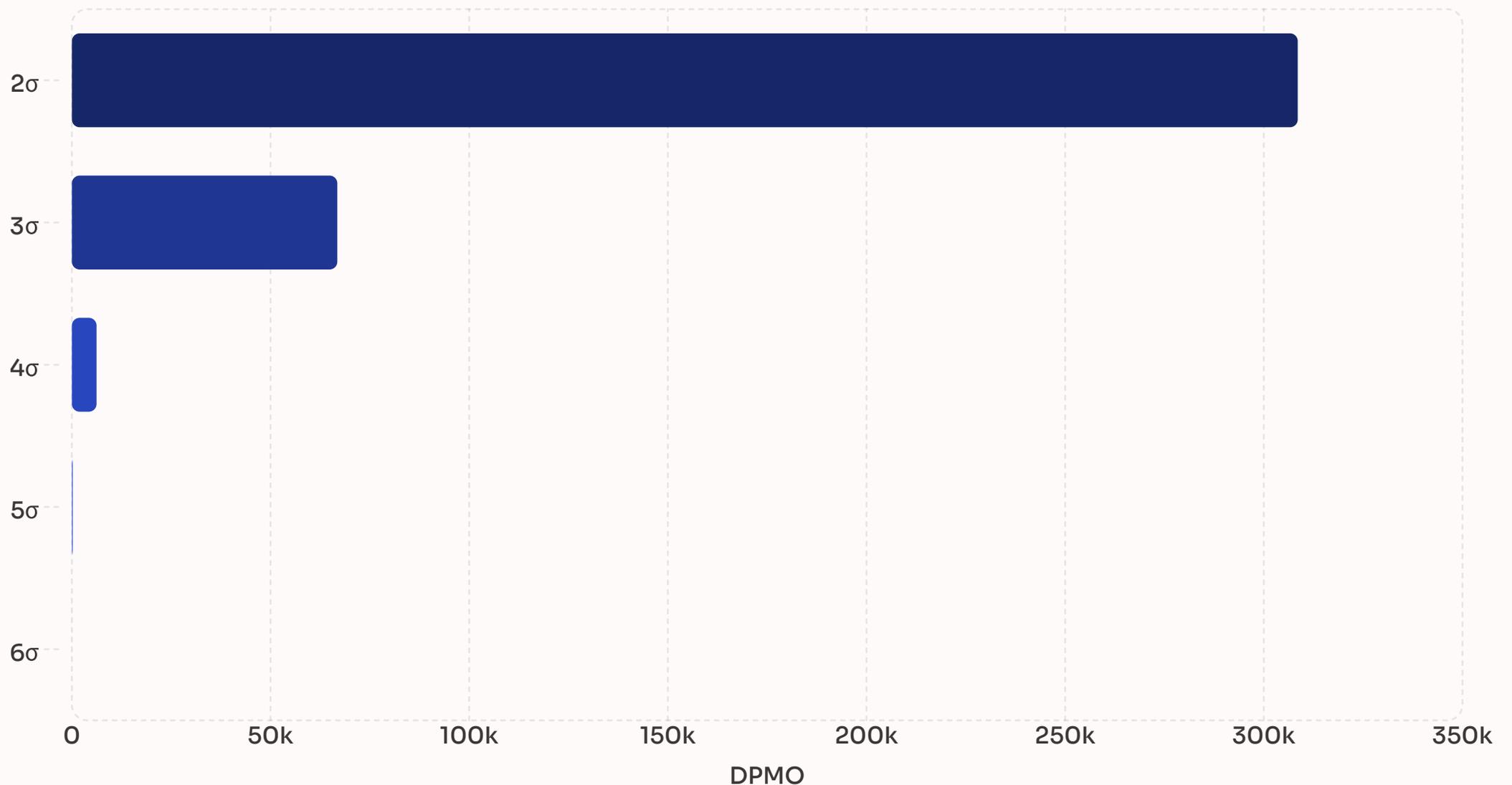
Most organizations operate between 3σ and 4σ. Reaching 6σ is the aspirational target that defines world-class quality.

BELT ROLES

What is the difference between a Black Belt and Master Black Belt?

Master Black Belts provide strategic guidance and advanced training; Black Belts lead projects

Master Black Belt

Strategic advisor, trains and coaches Black Belts, drives organizational Six Sigma culture, resolves complex statistical challenges

Black Belt

Full-time project leader, applies advanced statistical tools, mentors Green Belts, leads cross-functional improvement projects

Green Belt

Part-time practitioner, leads smaller projects, supports Black Belt efforts with data collection and basic analysis

Exam Tip: Master Black Belts are the "teachers of teachers" — they shape the methodology at the organizational level rather than running individual projects.

What is the role of a Six Sigma Champion?

Senior leader who sponsors projects and removes organizational barriers

Strategic Alignment

Champions select projects that align with business strategy and ensure they deliver measurable value to the organization's bottom line.

Barrier Removal

When teams face organizational resistance, resource shortages, or cross-departmental conflicts, Champions use their authority to clear the path.
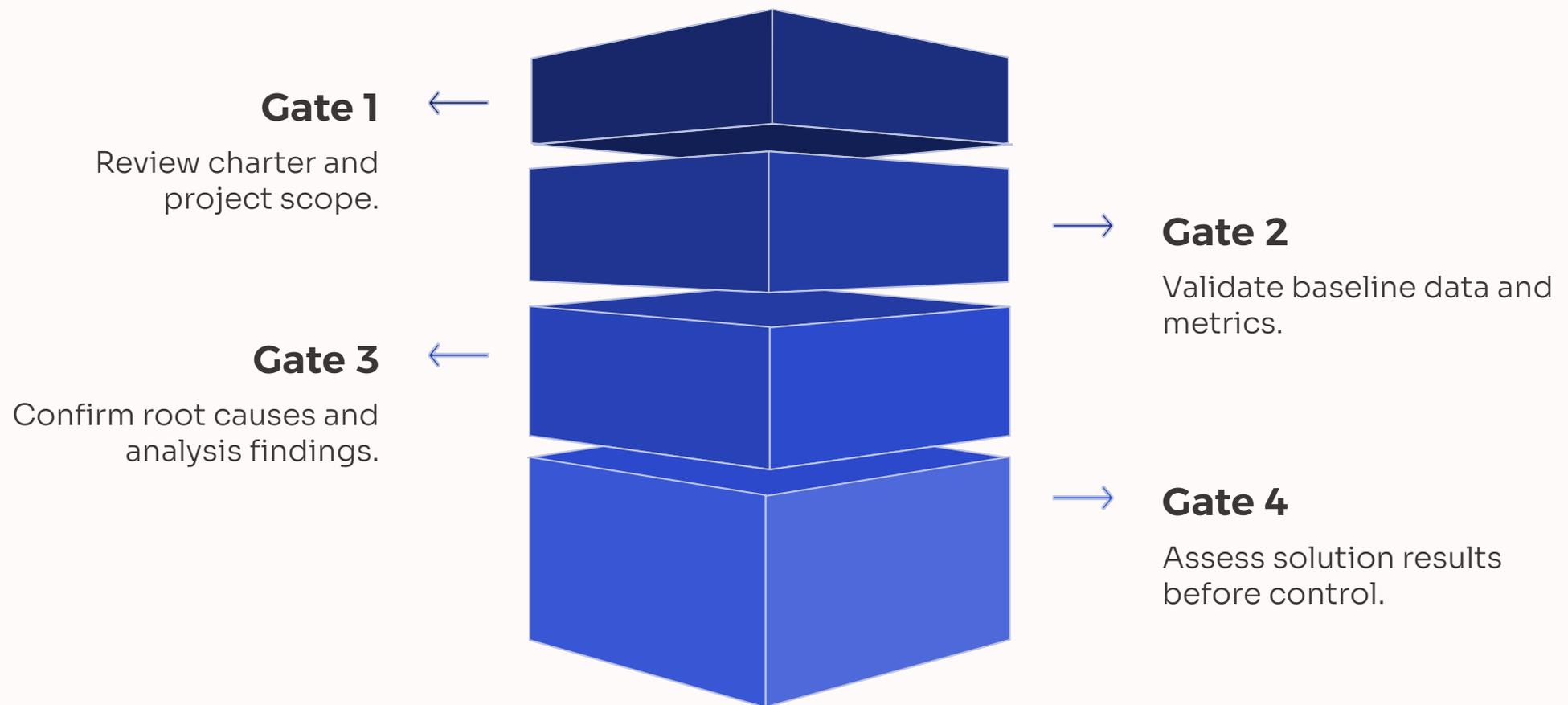
Resource Allocation

Champions secure budget, personnel, and time for project teams to execute their work effectively.

Without strong Champions, even well-planned Six Sigma projects can stall. Champions provide the executive sponsorship that turns analysis into action.

What is a tollgate review?

A checkpoint meeting to review project progress and approve moving to the next phase

Gate 1 ←

Review charter and
project scope.

→ **Gate 2**

Validate baseline data and
metrics.

Gate 3 ←

Confirm root causes and
analysis findings.

→ **Gate 4**

Assess solution results
before control.

Tollgate reviews are formal checkpoints conducted with the project sponsor and leadership. The team presents deliverables from the completed phase, and the reviewers decide whether to approve advancement, request rework, or redirect the project. Think of tollgates as quality gates for the project itself.

PROCESS TOOL

What is the purpose of a process map?

To visually document the steps in a process for analysis

What Process Maps Reveal

- Redundant or unnecessary steps
- Decision points and handoffs
- Bottlenecks and delays
- Gaps between "as-is" and "should be"
- Opportunities for standardization

Types of Process Maps

- **Basic Flowchart**

  Sequential steps with decision diamonds

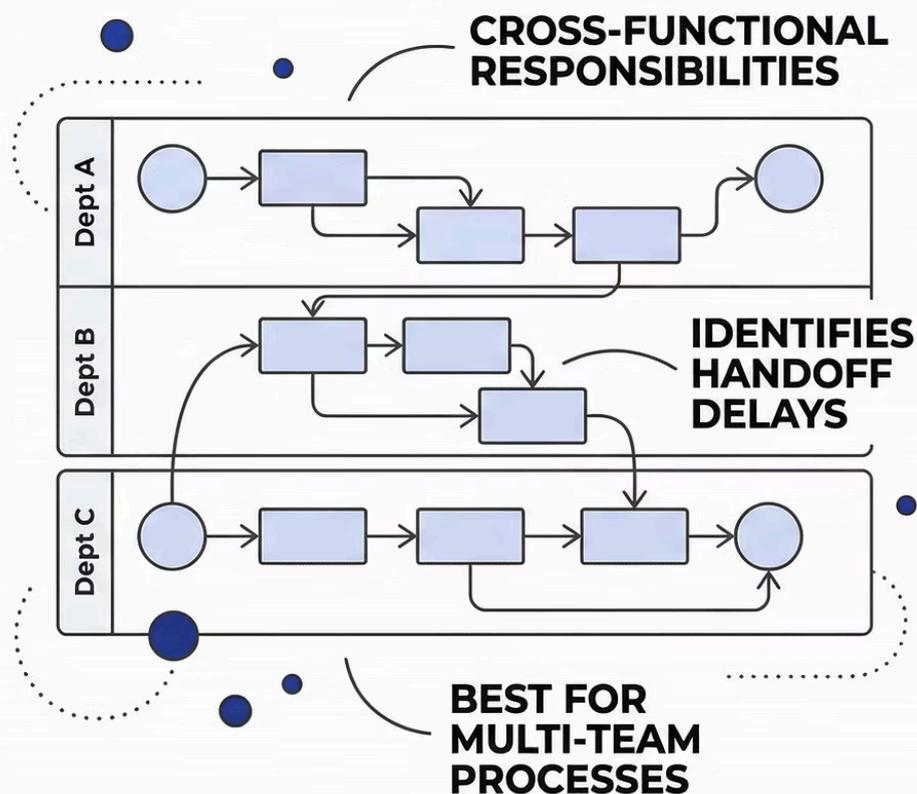- **Swimlane Map**

  Steps organized by department or role

- **Value Stream Map**

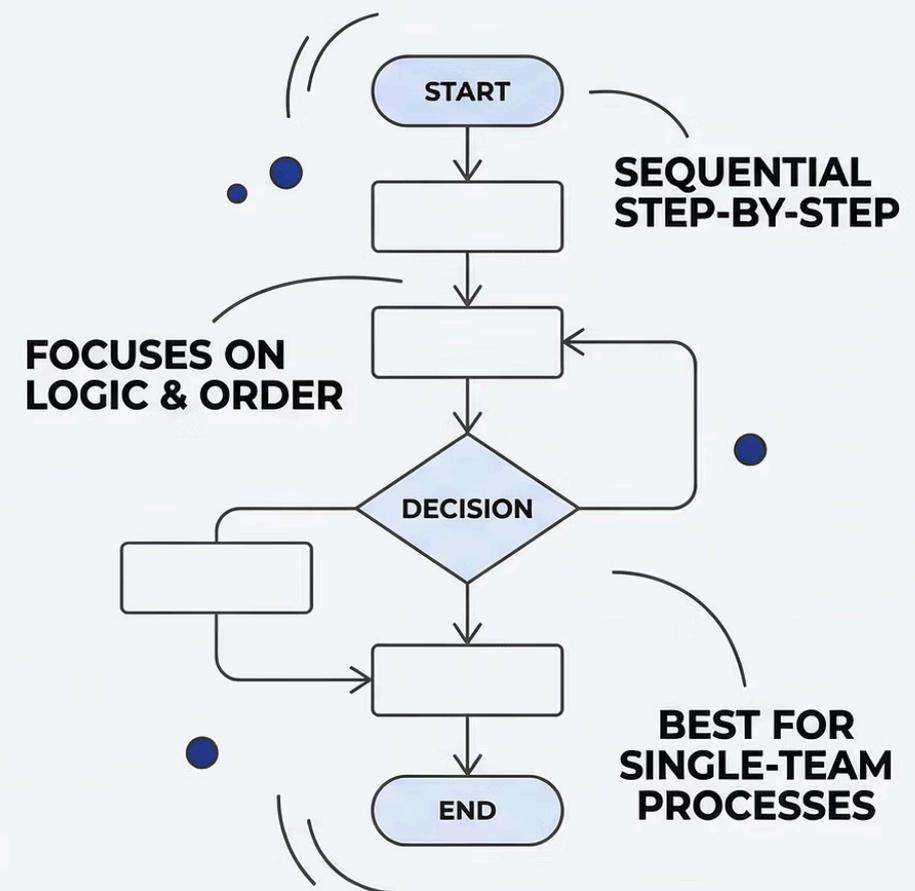 Material and information flow with timing

What is the difference between a swimlane and a flowchart?

> Swimlane maps show process steps by department; flowcharts show sequence of steps

SWIMLANE MAP

Dept A

Dept B

Dept C

CROSS-FUNCTIONAL RESPONSIBILITIES

IDENTIFIES HANDOFF DELAYS

BEST FOR MULTI-TEAM PROCESSES

FLOWCHART

START

DECISION

END

SEQUENTIAL STEP-BY-STEP

FOCUSES ON LOGIC & ORDER

BEST FOR SINGLE-TEAM PROCESSES

Exam Tip: Swimlane diagrams are especially useful in the **Measure and Analyze phases** because they expose handoff delays and unclear ownership — common sources of waste and variation.

What is the significance of baseline data?

It establishes current process performance before improvements

1	2	3
Before (Baseline)	**Improvement**	**After (Results)**
Document current performance: defect rates, cycle times, capability metrics	Implement solutions during the Improve phase	Compare new performance against the baseline to quantify gains

📝 **Without a baseline, you cannot prove improvement.** It's the "before" picture that gives the "after" picture its meaning. Baseline data must be collected using a validated measurement system to ensure accuracy.

What is the role of statistical software like Minitab in Six Sigma?

To perform data analysis, hypothesis testing, and process capability studies

Descriptive Statistics

Summarize data with means, standard deviations, histograms, and box plots

Hypothesis Testing

Run t-tests, ANOVA, chi-square, and regression analyses with accurate p-values

Control Charts

Generate X-bar/R, I-MR, p-charts, and other SPC charts with automatic limit calculations

Capability Analysis

Calculate Cp, Cpk, Pp, Ppk and generate capability histograms

While your exam tests *conceptual understanding*, software like Minitab, JMP, or even Excel handles the heavy computation in real projects. Know the concepts — the software does the math.

STATISTICAL CONCEPT

What is the difference between correlation and causation?

Correlation shows **relationship**; causation proves one factor **causes** another

Correlation

Two variables move together — but this doesn't mean one causes the other. **Example:** Ice cream sales and drowning incidents both increase in summer, but ice cream doesn't cause drowning. Both are driven by a third factor: hot weather.

Causation

A change in one variable directly produces a change in another. Proving causation requires **controlled experiments** (like DOE) where other factors are held constant.

Exam Tip: Correlation analysis (scatter plots, regression) identifies *relationships*. Only DOE or controlled experiments can confirm *causation*. Never assume correlation equals causation.

What is a SIPOC diagram used for?

> **To identify all relevant elements of a process before detailed analysis**

SIPOC provides the team with a high-level overview of a process *before* diving into detailed process mapping. It's typically created during the **Define phase** and helps the team agree on the process boundaries and key stakeholders.

Suppliers	Inputs	Process	Outputs	Customers
Vendors	Raw materials	Step 1: Receive	Finished product	End users
IT systems	Data/orders	Step 2: Build	Reports	Internal teams
Employees	Labor/skills	Step 3: Ship	Delivery	Distributors

Remember: SIPOC answers *"What's the big picture?"* while detailed process maps answer *"What happens step by step?"*

What is the purpose of a Kaizen Blitz?

Rapid improvement event focused on quick wins in a process

Kaizen Blitz Characteristics

- Typically 1–3 days (shorter than a standard Kaizen event)
- Focused on a single, well-defined problem
- Cross-functional team assembled
- Immediate, hands-on changes
- Results visible by end of the event

When to Use a Blitz

- Low-hanging fruit improvements are available
- The root cause is already understood
- Quick momentum is needed to build team engagement
- Changes don't require significant capital investment

Blitz ≠ DMAIC: A Blitz is fast action; DMAIC is structured analysis.

CERTIFICATION

Green Belt vs. Black Belt Certifications

Green Belt focuses on **project participation and smaller projects**; **Black Belt** leads **complex projects and mentors others**

Dimension	Green Belt	Black Belt
Time Commitment	Part-time (25–50%)	Full-time (100%)
Project Scope	Departmental, smaller impact	Cross-functional, larger impact
Statistical Depth	Basic: control charts, capability, hypothesis testing	Advanced: DOE, regression, multivariate analysis
Mentoring	Receives mentoring from Black Belt	Mentors Green Belts and team members

What is the role of a Change Agent in Six Sigma?

To facilitate adoption of improvements and manage resistance

1

Communicate the Why

Help stakeholders understand the need for change and its benefits

2

Address Resistance

Identify concerns early and involve resistors in the improvement process

3

Build Ownership

Empower process owners to take responsibility for sustaining gains

4

Reinforce Adoption

Celebrate wins, track compliance, and provide ongoing support

Even the best technical solution will fail without effective change management. Change Agents bridge the gap between *what the data says to do* and *what people are willing to do*. This is especially critical in the Control phase when the project team hands off to operations.

Why align Six Sigma projects with business strategy?

Ensures projects deliver measurable value and support organizational goals

|	
1	**Vision**
2	**Strategic Goals**
3	**Six Sigma Projects**
4	**Daily Operations**

Projects that aren't tied to strategic priorities waste resources and fail to gain executive support. Champions should evaluate potential projects against criteria such as:

- **Financial impact:** Will this improve revenue or reduce costs?
- **Customer impact:** Will this improve satisfaction or retention?
- **Strategic fit:** Does this align with annual business objectives?
- **Feasibility:** Can this be completed with available resources?

What is the ultimate measure of Six Sigma project success?

> **Sustained process improvement with reduced defects and increased customer satisfaction**

Reduced Defects

Customer Satisfaction

Sustained Over Time

Measurable Results

Financial Impact
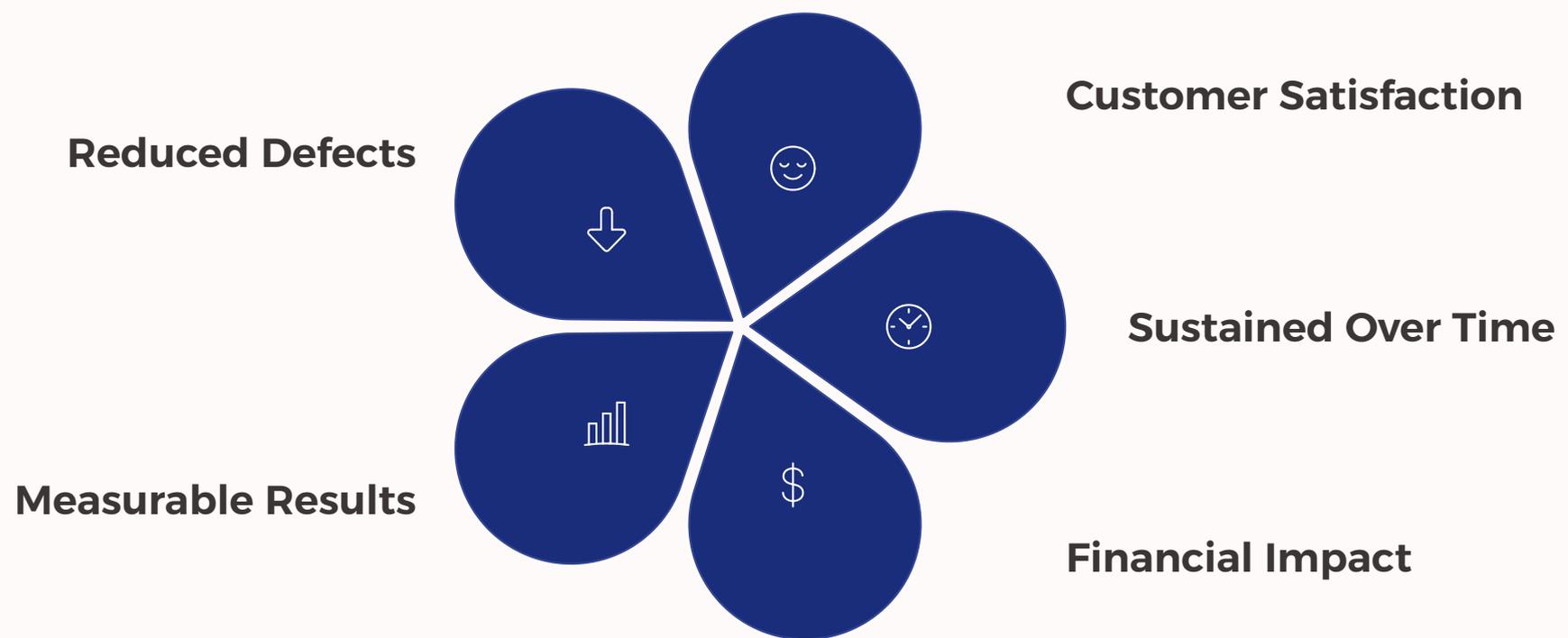
A successful Six Sigma project doesn't just show improvement at the tollgate — it demonstrates that the gains **stick**. The Control Plan, ongoing monitoring, and process owner accountability ensure that today's improvements become tomorrow's standard performance.

🗒️ 🎓 **You've completed all 50 flashcards!** Review any cards you found challenging, then test yourself without looking at the answers. Good luck on your Green Belt exam!

View All MSI Six Sigma Certification Options Here