I'm not a robot

back Problem solving is the process of finding solutions to obstacles or challenges you encounter in your life or work. It is a skill that allows you to tackle complex situations, adapt to changes, and overcome difficulties with ease. Problem-Solving Steps The problem-solving process typically includes the following steps: Identify the issue: Recognize the problem that needs to be solved. Analyze the situation: Examine the issue in depth, gather all relevant information, and consider any limitations or constraints that may be present. Generate potential solutions: Brainstorm a list of possible solutions to the issue, without immediately judging or evaluating them. Evaluate options: Weigh the pros and cons of each potential solution, considering factors such as feasibility, effectiveness, and potential risks. Select the best solution: Choose the option that best addresses the problem and aligns with your objectives. Implement the solution: Put the selected solution into action and monitor the results to ensure it resolves the issue. Review and learn: Reflect on the problem-solving process, identify any improvements or adjustments that can be made, and apply these learnings to future situations. Defining the Problem To start tackling a problem, first, identify and understand it. Analyzing the issue thoroughly helps to clarify its scope and nature. Ask questions to gather information and consider the problem from various angles. Some strategies to define the problem include: Brainstorming with others Asking the 5 Ws and 1 H (Who, What, When, Where, Why, and How) Analyzing cause and effect Creating a problem statement Generating Solutions Once the problem is clearly understood, brainstorm possible solutions. Think creatively and keep an open mind, as well as considering lessons from past experiences. Consider: Creating a list of potential ideas to solve the problem Grouping and categorizing similar solutions Prioritizing potential solutions based on feasibility, cost, and resources required Involving others to share diverse opinions and inputs 8 Ways to Deliver Excellent Customer Service Evaluating and Selecting Solutions Evaluate each potential solution, weighing its pros and cons. To facilitate decision-making, use techniques such as: SWOT analysis (Strengths, Weaknesses, Opportunities, Threats) Decision-making matrices Pros and cons lists Risk assessments After evaluating, choose the most suitable solution based on effectiveness, cost, and time constraints. Implementing and Monitoring the Solution Implement the chosen solution and monitor its progress. Key actions include: Communicating the solution to relevant parties Setting timelines and milestones Assigning tasks and responsibilities Monitoring the solution and making adjustments as necessary Evaluating the effectiveness of the solution after implementation Utilize feedback from stakeholders and consider potential improvements. Problem-Solving Techniques During each step, you may find it helpful to utilize various problem-solving techniques, such as: Brainstorming: A free-flowing, open-minded session where ideas are generated and listed without judgment, to encourage creativity and innovative thinking. Root cause analysis: A method that explores the underlying causes of a problem to find the most effective solution rather than addressing superficial symptoms. SWOT analysis: A tool used to evaluate the strengths, weaknesses, opportunities, and threats related to a problem or decision, providing a comprehensive view of the situation. Mind mapping: A visual technique that uses diagrams to organize and connect ideas, helping to identify patterns, relationships, and possible solutions. Brainstorming When facing a problem, start by conducting a brainstorming session. Gather your team and encourage an open discussion where everyone contributes ideas, no matter how outlandish they may seem. This helps you: Generate a diverse range of solutions Encourage all team members to participate When brainstorming: Reserve judgment until the session is over Encourage wild ideas Combine and improve upon ideas Root Cause Analysis For effective problem-solving, identifying the root cause of the issue at hand is crucial. Try these methods: 5 Whys: Ask “why” five times to get to the underlying cause. Fishbone Diagram: Create a diagram representing the problem and break it down into categories of potential causes. Pareto Analysis: Determine the few most significant causes underlying the majority of problems. SWOT Analysis SWOT analysis helps you examine the Strengths, Weaknesses, Opportunities, and Threats related to your problem. To perform a SWOT analysis: List your problem’s strengths, such as relevant resources or strong partnerships. Identify its weaknesses, such as knowledge gaps or limited resources. Explore opportunities, like trends or new technologies, that could help solve the problem. Recognize potential threats, like competition or regulatory barriers. SWOT analysis aids in understanding the internal and external factors affecting the problem, which can help guide your solution. Mind Mapping A mind map is a visual representation of your problem and potential solutions. It enables you to organize information in a structured and intuitive manner. To create a mind map: Write the problem in the center of a blank page. Draw branches from the central problem to related sub-problems or contributing factors. Add more branches to represent potential solutions or further ideas. Mind mapping allows you to visually see connections between ideas and promotes creativity in problem-solving. Nearly 90% of employers seek evidence of problem-solving skills when evaluating candidates. Problem-solving is about diving into the unknown, uncovering the root cause, crafting creative solutions, taking decisive action and learning from the results. Are you feeling stuck with a workplace problem? It could be anything — a process stuck in the Stone Age, costs ballooning out of control or employees feeling overwhelmed by the mountain of endless work they have. Whatever the problem is, finding the right solution is the key to breaking free and skyrocketing toward success. And the problem-solving techniques below will help you unlock your team’s potential. Problem-solving finds a way to move from a problem to a solution. Problem-solving techniques include The 5 Whys, Fishbone Diagram and Mind Mapping. There’s no one-method-fits-all solution — the best problem solvers use various methods to flesh out new and creative solutions. Forget one-size-fits-all solutions. Successful problem-solving is a symphony of skills played by a team of all-stars. It involves combining skills, communication styles, critical thinking, information processing and decision-making with other problem-solving powerhouses to find the one solution that fixes the problem in the best possible way. While there are many different advanced problem-solving methods, they’re all informed by this 7-step process: 1. Problem IdentificationClearly define the issue you are trying to solve.2. Problem Analysis and RefinementDetermine the impact of the problem and what is required to solve it. 3. Solution GenerationDevelop solutions that could solve the problem using different problem-solving methods. 4. Solution DevelopmentDesign, pre-test and pilot the chosen solution to refine it before implementation. 5. Decision Making and PlanningDecide specifics like roles, timelines and successes. 6. Solution ImplementationImplement the solution, either all at once or over stages. 7. Solution EvaluationMeasure and review results for solution effectiveness. It’s all about leveraging your team’s collective brainpower to come up with an effective solution. Once you have the basic problem-solving framework down, you can hone in on more specific action items. Feeling like you’re just putting out fires instead of solving problems? Don’t fall victim to the band-aid mentality. Clearly defining the problem can identify the true root cause. Taking time to peel back the layers and find the origin of the problem will help give a clear definition and understanding of the larger problem at hand to crush the problem for good. When clearly defining and solving a larger problem, it might be helpful to break it down into smaller pieces or steps. This allows you to focus on resolving each singular micro-problem, which will alleviate the overarching hurdle. Not only does it make things more manageable, but it also allows you to prioritize the business needs strategically, tackling the most critical challenges first. Has your team hit a snag in a process that’s been chugging along for what seems like centuries? Problems often occur from inefficient processes happening over time. Gathering information is vital to finding a new solution. The more data you gather, the faster you’ll unmask the hidden pattern causing the roadblock. Organize your data into sleek tables or eye-catching charts to help visualize the underlying pattern contributing to the roadblock. Ever feel like you’ve hit a dead end on a problem? You don’t know what you don’t know, so turning to a brainstorming session will be key. Brainstorming is an informal way to elicit creative and diverse opinions on how to solve the problem at hand. Plus, brainstorming sessions allow visibility to individuals who might not always be the most vocal otherwise. Sure, the basic problem-solving steps get you started. But what about when the solution hides deeper than the surface level? Forget the tired dichotomy of problem and solution. Problem-solving is all about forging new paths and leaving assumptions behind. These advanced steps are your secret weapons, ready to unleash a wave of creative solutions and conquer even the trickiest challenges. Feeling like you’re just treating the symptoms of a problem, not the real beast lurking beneath? Time to channel your inner curious toddler and unleash the power of the “Why?” Method. Like a toddler learning to explore the world around them, the 5 Whys method repeatedly asks the question “why” to peel back the layers of a problem, eventually exposing the root obstacle. The stages of the 5 Whys method include: Acknowledging a specific problem (e.g., poor employee performance) Asking why the problem happened (e.g., the employee isn’t reaching monthly goals) Continually asking “why” until you find the root cause of the initial problem, which differentiates causes from causal factors (e.g., the employee didn’t have the support they needed from other teammates, causing them to miss monthly goals) A different approach to finding the potential causes of a problem is drawing a fishbone diagram. This isn’t some boring old chart — it’s a visual powerhouse designed to uncover the root cause and its sneaky little accomplices. Here’s how it works: after brainstorming all the possible culprits behind your problem, you’ll rank them by their villainous potential. Then, each major cause becomes a main bone on the diagram, with smaller sub-bones branching out to capture even the most intricate details. This will create a clear visual of the big-picture problem, making it easier to solve step-by-step. Feeling like you’ve exhausted previous problem-solving techniques examples and the solutions are still brewing up bland? It’s time to unleash the power of the SCAMPER method, your secret weapon for thinking up new and creative ideas that might have gone unnoticed. Substitute: Can you substitute an element of an ineffective solution for a new one? Combine: Can you combine ideas to create a powerful solution? Adapt: Can you adapt a solution to a different problem to fit the need? Modify: Can you modify a current solution to make it work better? Put to another use: Can you find a new way to use an existing resource to solve your problem? Eliminate: Can you eliminate unnecessary elements to find a solution or modify the problem? Reverse or rearrange: Can you reverse the problem to see it differently? This method allows you to explore possibilities and solutions you might not have uncovered with other problem-solving methods. It also helps you improvise when no other solution seems possible. Try lateral thinking for an outside-the-box approach to finding solutions that aren’t immediately plain to see. Otherwise known as horizontal or divergent thinking, lateral thinking uses situational awareness and random stimulation to spark new ideas. By exploring alternatives and twisting the problem from different angles, you’ll unlock a treasure trove of innovative insights. Feeling like your brain is a pile of mush from trying to solve your business problem? Mind map it. Mind mapping organizes the noise around the main problem by prioritizing the most critical aspects of the problem as the center. Other causes of the main problem branch off the center, with sub-branches being used to investigate these points further. This isn’t just about organizing information — it’s about freeing your mind from the stress of overthinking. Taking the problem apart visually will help you unlock new pathways to solutions you might have missed before. Brainstorming is a great way to flesh out many possible solutions, but not every idea is a winner. The key to a winning solution is to think of it like a recipe — you need to have all the right ingredients. The first step is to consider feasibility when evaluating solutions to solve a problem. Determining what options are practical to implement will help narrow your list of possible solutions to just a handful of realistic ideas. Ask some hard-hitting questions to filter out the fluff: Does this solution actually solve the problem, or is this a temporary fix? Does this solution cause new problems while solving the old one? Have we already applied this solution? If so, how can we change the existing process? Is this solution ethical? Is this solution legal, or could it pose legal problems? Is the solution scalable enough to grow with the business? Assessing feasibility isn’t a linear process and might take a few rounds of questioning to do it right, but only the champion solutions will conquer your problem once and for all. After determining which problem-solving solutions are feasible, you’ll want to weigh the pros and cons of each like a strategic mastermind. You can use a simple table method, or for a more refined approach, use the questions below to score each potential solution. For each question that results in a positive outlook, score with a positive number, and for cons, score a negative number. How long will the solution take to implement? How much will the solution cost? What kind of support will be needed to implement the solution? What are the advantages of this solution? What risks are we facing with this solution? After asking these questions and scoring each solution, you’ll see the clear winner emerge. It’s no big secret — the bottom line in business is crucial. Looking at a very practical point of view when evaluating possible problem-solving solutions, the cost-benefit analysis helps determine the costs and benefits of a solution if it becomes implemented. Think of it like mapping the financial landscape of each solution. Consider the direct and indirect costs, the hidden opportunities you might give up, and even the potential risks lurking in the shadows. It’s all about seeing the full picture before you make your move. By the end, you should know the total cost and the net gain, making it a no-brainer to choose the solution that delivers the biggest win (and the biggest ROI). Finally, the best problem-solving techniques focus on the long-term impact. That means considering the big picture from all angles: the company, your team and beyond. Will this solution truly cure the problem for good? Or will there be other implications down the road? And how will the solution impact your company’s bottom dollar? Forecasting your solution’s impact on profits, workforce and customer satisfaction is crucial before getting the ball in motion. Problem? Identified. Solution? Chosen. So ... now what? Before launching your solution into action, it’s time to craft a battle plan by following a roadmap to solution success. As important as finding a practical solution to your problem, you’re only part way to seeing a resolution. Developing an action plan for implementing this solution is the next hurdle to overcome: How long will it take to roll out this solution? Will it be all at once or over several stages? How is success determined? What does failure look like, and how is it handled? What milestones are important to report on? How much of the workforce is needed to support the solution? Who will this solution impact, and how will they be made aware of the changes? Taking time to develop a thorough action plan before solution implementation will only help your plan to succeed with minimal roadblocks. Time to suit up and assemble. Inspirational leaders know that it takes a team to make anything succeed, and making an effective problem-solving strategy succeed is no different. Once a solid action plan is in place, it’s time to choose the right tasks for the suitable contributor. Then, you’ll set clear expectations on start dates, expected milestones and whether they will have any additional sub-tasks due to success or failure. Be sure to provide support throughout the process and offer ample effective communication for continued success. When it comes to problem-solving, you can’t “set it and forget it.” Now that your problem’s resolution is in full motion, it’s time to monitor the progress. Schedule regular check-ins with your team, acting as your mission control. These check-ins are all about celebrating wins (big or small), identifying any roadblocks that might slow progress down and, most importantly, making sure the team is meeting those all-important milestone deadlines. Remember: Full success might not happen immediately, and tracking how things shake out at each milestone will help recalibrate. Not every plan is destined to succeed, at least not at first. As you monitor the progress of the solution to your problem, understand that roadblocks might happen. Don’t look at failure as a setback — use it as a learning opportunity to decide what part of the solution is working and what needs to be revamped to get to the finish line. Use challenges to become even stronger, more adaptable leaders. Effective problem-solving takes practice and vision, especially with intricate or complex situations. Even more importantly, problem-solving is a group effort. The old adage that “two heads are better than one” is true — finding a feasible solution that benefits everyone is a group effort and should be treated as such. Strong problem solvers: Embrace diverse and new strategies Break down the problem into smaller segments to find holistic solutions Keep an open mind for new ways to solve old problems Provide constructive self-evaluation without taking failures personally Avoid jumping to conclusions on the best solution without investigating For opportunities to implement the best problem-solving techniques, explore our open positions today. And keep trying; I know you’ll find a solution that works for you. To finding all of the hidden solutions to solve your business problems,Thomas \mathrm{simplify} \mathrm{solve\:for} \mathrm{inverse} \mathrm{tangent} \mathrm{line} See All AI explanations are generated using OpenAI technology. AI generated content may present inaccurate or offensive content that does not represent Symbolab's view. 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Next, identify the relevant information, define the variables, and plan a strategy for solving the problem. en Related Symbolab blog posts AI may present inaccurate or offensive content that does not represent Symbolab's views. View Full Notebook An equation says two things are equal. It will have an equals sign "=" like this: That equations says: what is on the left (x − 2) equals what is on the right (4) So an equation is like a statement "this equals that" What is a Solution? A Solution is a value we can put in place of a variable (such as x) that makes the equation true. When we put 6 in place of x we get: 6 − 2 = 4 which is true So x = 6 is a solution. How about other values for x ? For x=5 we get "5−2=4" which is not true, so x=5 is not a solution For x=9 we get "9−2=4" which is not true, so x=9 is not a solution etc In this case x = 6 is the only solution. You might like to practice solving some animated equations. More Than One Solution There can be more than one solution. When x is 3 we get: (3−3)(3−2) = 0 × 1 = 0 which is true And when x is 2 we get: (2−3)(2−2) = (−1) × 0 = 0 which is also true So the solutions are: x = 3, or x = 2 When we gather all solutions together it is called a Solution Set The above solution set is: {2, 3} Solutions Everywhere! Some equations are true for all allowed values and are then called Identities Let's try θ = 30°: sin(−30°) = −0.5 and −sin(30°) = −0.5 So it is true for θ = 30° Let's try θ = 90°: sin(−90°) = −1 and −sin(90°) = −1 So it is also true for θ = 90° Is it true for all values of θ? Try some values for yourself! How to Solve an Equation There is no "one perfect way" to solve all equations. A Useful Goal But we often get success when our goal is to end up with: In other words, we want to move everything except "x" (or whatever name the variable has) over to the right hand side. Start with:3x − 6 = 9 Add 6 to both sides:3x = 9+6 Divide by 3:x = (9+6)/3 Now we have x = something, and a short calculation reveals x = 5 Like a Puzzle In fact, solving an equation is just like solving a puzzle. And like puzzles, there are things we can (and cannot) do. Here are some things we can do: Start with:√(x/2) = 3 Square both sides:x/2 = 32 Calculate 32 = 9:x/2 = 9 Multiply both sides by 2:x = 18 And the more "tricks" and techniques you learn the better you will get. Special Equations There are special ways of solving some types of equations. Learn how to ... Check Your Solutions You should always check that your "solution" really is a solution. How To Check Take the solution(s) and put them in the original equation to see if they really work. 2xx − 3 + 3 = 6x − 3 (x≠3) We have said x≠3 to avoid a division by zero. Let's multiply through by (x − 3): 2x + 3(x−3) = 6 Bring the 6 to the left: 2x + 3(x−3) − 6 = 0 Expand and solve: 2x + 3x − 9 − 6 = 0 5x − 15 = 0 5(x − 3) = 0 x − 3 = 0 Which can be solved by having x=3 Let us check x=3 using the original question: 2 × 3 3 − 3 + 3 = 6 3 − 3 Hang On: 3 − 3 = 0 That means dividing by Zero! And anyway, we said at the top that x≠3, so ... x = 3 does not actually work, and so: There is No Solution! That was interesting ... we thought we had found a solution, but when we looked back at the question we found it wasn't allowed! This gives us a moral lesson: "Solving" only gives us possible solutions, they need to be checked! Tips Note down where an expression is not defined (due to a division by zero, the square root of a negative number, or some other reason) Show all the steps, so it can be checked later (by you or someone else) 493, 2324, 494, 2325, 495, 1137, 2326, 1138, 1139, 2327 Copyright © 2025 Rod Pierce This word problem solver helps solve numerical or problem-based questions with step-by-step solutions. Simply type in the problem or upload an image, and the tool will guide you through the solution. Whether it’s about numbers, measurements, units, distance problems, cost problems, investment problems, or percent problems, you can use this tool for a limited number of free questions. How To Solve Word Problems Step-By-Step? Read The Word Problem: Start by reading the problem carefully to understand what it is asking Break Down: Break down the problem into smaller parts and define variables if needed Solve The Equation: Use the appropriate mathematical operations to solve the problem Interpret The Results: Explain the answer in simple wording and keep it as short as one single sentence Sarah has 24 apples. She wants to put them into bags. If she puts 6 apples in each bag, how many bags will she have? Solution: Sarah has a total of 24 apples and wants to put 6 apples in each bag. To find the number of bags, we can divide the total number of apples by the number of apples per bag. The equation is: Number of bags = Total apples Apples per bag Number of bags = 24 6 = 4 Therefore, Sarah will have 4 bags of apples. How To Use the Math Word Problem Calculator? Copy and paste your word problem in the input field of the word problem math solver. Provide a detailed explanation for having accurate results After adding your problem, just click on the “Calculate” button Our math word problem solver will readily provide you with detailed answers. 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