



PROBLEM SOLVING

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WHAT'S A PROBLEM?

A perceived gap between the existing state and a desired state
a deviation from a norm, standard, or status quo.

- BusinessDictionary.com

When midterms kill you, but you still have to enroll in classes



PROBLEM SOLVING

Problem solving is the process or act of finding a solution to a problem.

PROCESSES INVOLVED IN SOLVING A PROBLEM

- Problem identification
- Generating alternative solutions.
- Evaluating the alternative solutions.
- Implementing the chosen solution.

PROBLEM IDENTIFICATION

- Admitting that a problem exists is the first step in solving a problem.
- Clearly stating what the problem is by gathering relevant information surrounding the problem.
- Identifying the nature of the problem.

Sometimes problems are simple



- When the problem is *simple*, the solution is usually *obvious*, and there is no need to follow the other steps outlined earlier.
- Unfortunately, problems could get too *complex*, and the solution might not be obvious anymore.

When you solve a maths
problem 3 times



and get different answer
each time

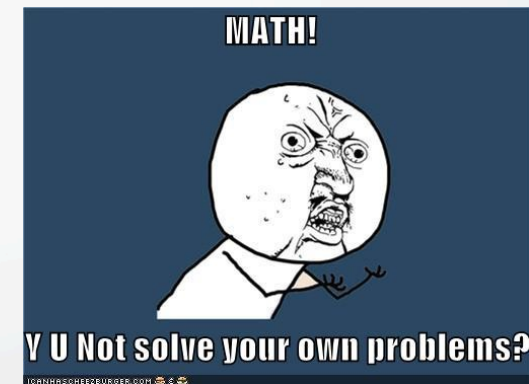
GENERATING ALTERNATIVE SOLUTIONS

- Understand the problem
 - Why is it a problem?
 - What is the goal?
- Gather as many alternative solutions as possible because they can significantly *enhance the value* of your final solution.
- **Brainstorming** and **team problem-solving techniques** are both useful tools in this stage of problem solving.



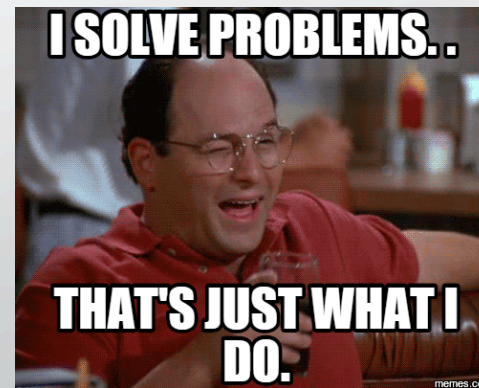
EVALUATING THE ALTERNATIVE SOLUTIONS

- Does the solution guarantee a result?
 - **Algorithms** – Guarantees a result (in most cases)
 - **Heuristics** – Does not guarantee a result
- Does the solution solve the problem without causing other *sub-problems*?
- Is the solution *practical*?
- Does the solution fit within the organizational constraints?



IMPLEMENTING THE CHOSEN SOLUTION

- You are ready to act on your chosen solution.
- During implementation, more problems may arise especially if identification or structuring of the original problem was not carried out fully.



References

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- <http://asq.org/learn-about-quality/problem-solving/overview/overview.htm>
- <https://www.skillsyouneed.com/ips/problem-solving.html>
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Thank you