13. Problem Solving Techniques

Quiz 1:

Question 1 of 10

John repeatedly asks why-type questions to analyze a problem. What does he produce?

- a chart or table
- an equation
- a matrix
- **a tree or chain**

Question 2 of 10

What are the "Five Whys"?

- **a way to assess the system, rather than the first person who has a problem**
- a linear method for getting to the root cause of a problem
- a way to blame management for everything

Question 3 of 10

When investigating fault, why does it make sense to try swapping items in the scenario around?

- to get at least one combination that works so you can get the job done
- to look as if you're doing something
- **to find out where the fault lies**

- to invalidate the null state

Question 4 of 10

Senge says ____.

- we struggle with time lags of more than two minutes
- applying mathematical analysis is the answer
- we will never win
- **we think we are in control, but really, our decisions are predictable**

Question 5 of 10

Company A has 50,000 customers. According to the Pareto principle, about how many of those customers are responsible for 80 percent of the customer complaints?

- 20000
- 5000
- 30000
- **10000**

Question 6 of 10

How can you prove that you have found the real or correct cause of a problem?

- **Compare control groups.**
- Set up a cause matrix.
- Implement all possible solutions.
- Test every combination of causes.

Question 7 of 10

According to Senge, what do most difficult processes have in common?

- multiple inputs and outcomes
- uncertainty and prediction
- **time delays and feedback**
- loops and branches

Question 8 of 10

What is the most common reason for assuming the wrong cause of a problem?

- A problem might be its own cause.
- **There can be a common cause for two problems, so you think one problem is causing the other.**
- A problem might not have a cause at all.

Question 9 of 10

What is Pareto's primary message?

- Pareto does not apply to staff and service, only to factories.
- 20% of problems come from 80% of causes.
- **80% of problems come from 20% of causes.**
- 80% of problems come from 80% of causes.

Question 10 of 10

A solution identification and evaluation process in the Kepner-Tregoe paradigm could also be called ____.

-

incremental improvement

- optimization
- minimization
- **trial and error**

Quiz 2:

Question 1 of 10

Rosalinda wants to increase her creativity, but has no idea how to do so. What would you recommend?

- Think of analogies in other subject areas when solving problems.
- Create a checklist of methods to try.
- **Practice several of the documented formal techniques until she has favorites.**
- Deconstruct all the problems into component pieces.

Question 2 of 10

What is **not** true about decision trees?

- Decision trees can include probabilities.
- **Decision trees are just another version of a mind map.**
- Decision trees alternate between what you do and what other people do.
- Decision trees use a time axis as you go along the branches.

Question 3 of 10

Jim has no idea what a mind map is. How would you best describe one to him?

- It is an ordered outline with main topics and subtopics.

- **It includes branching clusters of ideas that expand outward from a central core.**
- It is an ordered lists of ideas.
- It is a random list of ideas placed wherever there is space on a page.

Question 4 of 10

What should an effective problem solver keep in mind when thinking about creativity?

- There are just three effective ways to increase creativity.
- **Creativity can be increased via many different techniques.**
- Creativity can help you identify a problem but not solve it.
- Creativity is fixed -- you either have it or you don't.

Question 5 of 10

What is the best type of thinking when solving a problem?

- Use the logical part of your brain first, then the creative part.
- Think inside the box.
- Tap your intuition by running with the first idea that you think of. It will be the best.
- **Generate lots of ideas and then choose the best one.**

Question 6 of 10

For which scenario would the use of a decision tree be most appropriate?

- outlining the logical structure of a problem
- listing all the factors that contribute to making a decision

- calculating probabilities and expected values
- **describing a sequence of choices and outcomes**

Question 7 of 10

When brainstorming, which practice should you follow for ideal results?

- **Separate the idea generation from the judging process.**
- Use the same people for the idea generation and for the judging.
- Collect all the ideas, including the bad ones.
- Throw out the bad ideas as you go along.

Question 8 of 10

Marge is a very analytical thinker who can reliably solve many problems. However, sometimes she gets stuck. What will help Marge?

- a more rigorous analysis
- checking for errors
- **a creative leap**
- dividing the problem into component parts

Question 9 of 10

Mind maps should be ____.

- **used to explain a problem as well as generate a view of a problem**
- created using a digital device instead of on paper
- laid out in landscape orientation rather than portrait
- used by one person, not a group

Question 10 of 10

Frank is leading a brainstorming group in his department. What are his two responsibilities?

- to create a list and order the list
- **to record ideas and discourage judging**
- to encourage participation and reject bad ideas
- to start discussions and evaluate ideas

Quiz 3:

Question 1 of 20

When solving problems, is it better to use intuition or logic?

- Logic is the most effective approach to solving problems.
- **It's best to use both approaches and see if the results agree.**
- Intuition is the most effective approach to solving problems.
- Neither approach is helpful for solving problems.

Question 2 of 20

The four rules for decision making include tossing a coin, choosing the simplest option, and ____.

- always doing the right
- always betting on red
- **realizing that if it's close, it doesn't matter**
- always doing the sums

Question 3 of 20

What is the central message of the "sunk cost" paradox?

- You should remember the past when you're thinking about the future.
- You should not build airplanes if your ship sinks.
- **Your decisions should be made only on the basis of the numbers going forward from now.**
- You can make up for the past by getting the future right.

Question 4 of 20

If your costs are between $230 and $250, and your sales are between $240 and $300, what is the range for your profits?

- $10 to $50
- **–$10 to $70**
- $10 to $70
- –$10 to $50

Question 5 of 20

An important way to avoid bias in framing is to use ____ words.

- **neutral**
- colorful
- common
- descriptive

Question 6 of 20

Manipulative framing can be deliberate or ____.

- **accidental**
- intentional
- mean-spirited
- goal-driven

Question 7 of 20

What is true about implementation?

- Implementation is the most important part of solving a problem.
- Implementation is the least important part of solving a problem.
- **Implementation is often forgotten.**

Question 8 of 20

Milan is analyzing a decision for which her heart and head disagree. What should Milan do?

- Trust her head.
- **Adjust both analyses until there is agreement.**
- She should not take any action, since there is disagreement.
- Trust her heart.

Question 9 of 20

Why is tossing a coin more interesting than simply making a random choice?

-

All coins are biased.

- There is more risk in making a decision this way.
- Using this process indicates that you do not really care.
- **Using this process may help you discover your emotions or intuition.**

Question 10 of 20

Alice wants to compare six possible solutions to a complex problem involving her family's affairs. How should Alice proceed?

- Build a mind map for the problem.
- Build a comparison chart, with intuition and logic columns for each option.
- Build a decision tree for the problem.
- **Build a comparison chart, with pros and cons for each option.**

Question 11 of 20

A comparison chart typically has ____.

- **columns for the strengths and weaknesses of each idea**
- an ANOVA graph
- Like and Dislike buttons
- monetary values for each option compared to the criteria

Question 12 of 20

How should you consider implementation in decision-making?

- Ignore it.
- Consider implementation costs.
-

Focus only on those solutions that are simple to implement.

- **Include it in the same way as any other factor.**

Question 13 of 20

Even though a rating chart is subjective, when is it most useful?

- when the scores are very close
- when there are many factors to consider
- **when making a group decision**
- when there is an ethical dilemma

Question 14 of 20

What is the best way to use a rating chart?

- **Multiply the scores for each option by the weighting of the factors.**
- Give each factor a score for how important it is.
- Put a factor in for gut feel.
- Ignore the top and bottom scoring factors.

Question 15 of 20

When making a decision, once you know the highest scoring option, what should you do?

- Check that it has all the "must-have" features.
- **Decide whether it has enough "want-to-have" features.**
- Definitely choose it.
- Check that it has enough of the "must-have" features.

Question 16 of 20

What is the expected value of an investment that has a 40 percent chance of yielding $1.2 million, and a 60 percent chance of losing $500,000?

- **180000**
- 480000
- 300000
- 700000

Question 17 of 20

What is **not** a good foundation for making a decision?

- **Choose the method with the largest upside.**
- Calculate the upside x probability minus the downside y probability.
- Choose the method with the smallest downside.
- Choose the method with the lowest risk of failure.

Question 18 of 20

Suppose you are selling items for $100 and your cost of goods are $90. Which analysis is the farthest off base?

- A 5% cost of good increase will halve your profit.
- A 10% price increase will double your profit.
- **A 5% price increase will double your profit.**
- A 5% price decrease will halve your profit.

Question 19 of 20

Why does Risky Shift occur?

- **Risk takers are more vocal than others.**
- Risk is difficult to calculate in groups.
- Individuals tend to encourage risk in others.
- There is less fear in a group.

Question 20 of 20

Greg is evaluating two pieces of equipment for purchase. They both meet minimum functionality requirements. How should Greg choose?

- by using intuition
- by changing the minimum requirements
- by comparing costs
- **by scoring the optional factors**