

# ACE Problem Solving Process

## Analyze the problem

- Annotate the written representation of the task
- Create alternative representations (sketches, graphs, verbal descriptions)
- State the goal
- Identify the given relevant information
- *Monitor one's progress:*
  - Ask if any of the given information is irrelevant/ missing/ contradictory
  - Contrast the current task to previous ones.
  - Check to understand the task
  - Consider alternative ways of interpreting the task and/ or goal

## Create a plan

- Using the givens, identify models, relationships, and/or concepts that might apply
- Symbolically relate the givens with the model
- Using the model/concepts/relationships, establish connections and intermediate steps between givens and goal
- *Monitor one's progress:*
  - Decide if the model(s) are compatible with each other.
  - Compare the plan to others used in previous tasks to determine if reasonable
  - Evaluate the plan for completeness. Decides if any approximations or assumptions, which weren't stated in the task, need to be made.
  - Consider alternative plans.

## Execute the plan

- Follow the plan until your goal is attained
- *Monitor one's progress:*
  - Examine the outcome of the plan for coherence.
  - Compare the result of the plan against previous experiences to test if reasonable
  - Check to see if the task has been completed.
  - Ponder alternative ways of executing the plan.

