

Analogies for TRIZ

TRIZ and Mathematics

The analogy between TRIZ and mathematics can be seen from the following comparison:

Mathematics	TRIZ
A general purpose methodology for developing solutions related to the functioning of various systems	A general purpose methodology for developing solutions related to the evolution of various systems
Includes: <ul style="list-style-type: none"> • Processes for generalizing and building models (equations, graphs, multiples, etc.) of a real situation • Processes for modeling transformations (solving equations) • Utilization of specific knowledge • Processes for transitioning from an abstract model of a solution to a real situation 	Includes: <ul style="list-style-type: none"> • Processes for generalizing and building models (event diagrams or graphs, contradictions, SF models, etc.) of a real situation • Processes for modeling transformations (formulation of problem statements, resolving contradictions, SF model transformation, etc.) • Utilization of specific knowledge • Processes for transitioning from an abstract model of a solution to a real situation
Mathematics is utilized for the continued development of mathematics	TRIZ is utilized for the continued development of TRIZ
Math represents a professional language that allows specialists from different fields to uniformly describe the functioning and problems of a system, facilitating mutual understanding between professionals	TRIZ represents a professional language that allows specialists from different fields to uniformly describe system evolution and associated problems, facilitating mutual understanding between professionals



TRIZ and Biology

The analogy between TRIZ and biology can be seen from the following comparison:

Biology	TRIZ
Contemporary biology is based on an evolutionary approach that includes the theory of biological evolution, and genetics, that is, two vast knowledge areas related to the generation of new biological species and organisms	TRIZ is based on an evolutionary approach rooted in the study of the history of establishing and evolving technical and other systems
Evolutionary biology entails the study of the evolution of any live organism, from a protein molecule to entire populations	TRIZ entails the study of the evolution of any man-made system, from technical systems to economic and social processes
There are objective (i.e., not dependent on human involvement) patterns of biological evolution	There are objective (i.e., not dependent on human involvement) patterns of evolution of man-made systems
Knowledge of these patterns allows for the purposeful influence on evolution, forming desirable species of plant and/or animals and controlling population size	Knowledge of these patterns allows for the to purposeful influence on the evolution of man-made systems in desirable directions

TRIZ and Art

The analogy between TRIZ and art can be seen from the following comparison:

Art	TRIZ
Focused on creativity	Focused on creativity
Strong dependence on personality, psychology and the experience of the creator	Strong dependence on personality, psychology and the experience of the creator
Can provide unlimited self-improvement	Can provide unlimited self-improvement
Involves the peaceful collaboration of creativity with often complex tools and processes	Involves the peaceful collaboration of creativity with often complex tools and processes