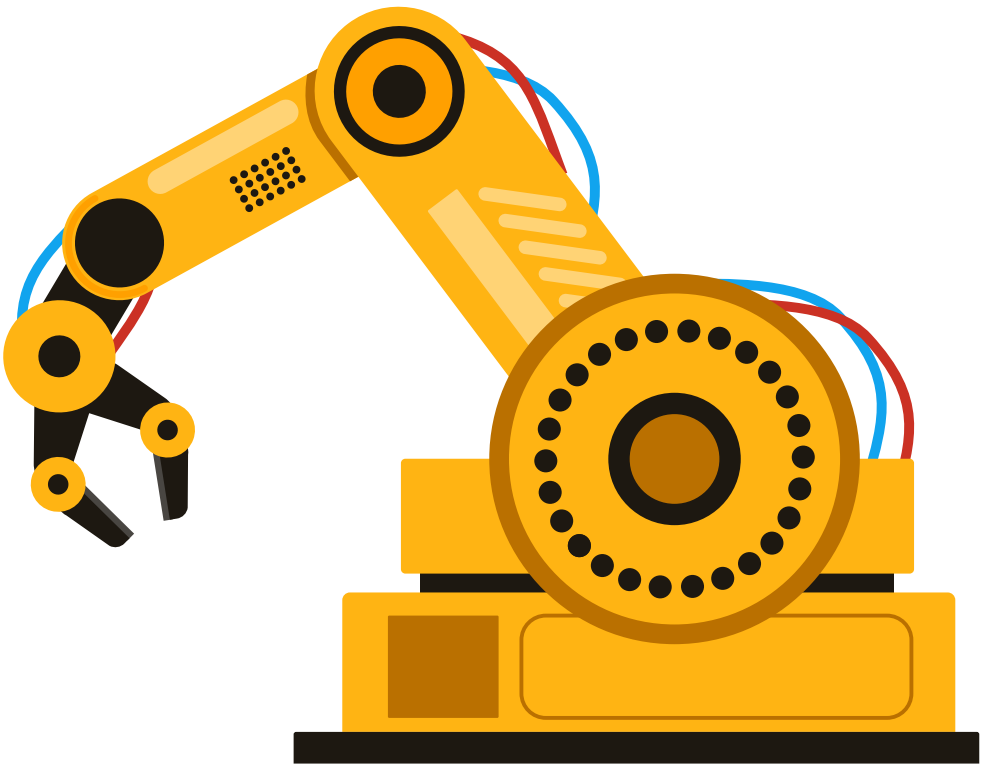
CONVERGENT VS DIVERGENT THINKING

BY CAOS ROBOTICS

What is the difference between convergent and divergent thinking?

While our Mind Map entry for our 11/17/22 meeting specifically described how divergent thinking was indispensable of our design of our robot for the 2022-2023 FTC Challenge, we understand that it is still important to remain flexible and leverage a variety of different skills and mindsets to optimize our productivity.

This is why we dedicate this worksheet to helping students analyze the similarities, differences, pros, and cons of ***each*** mode of thinking.



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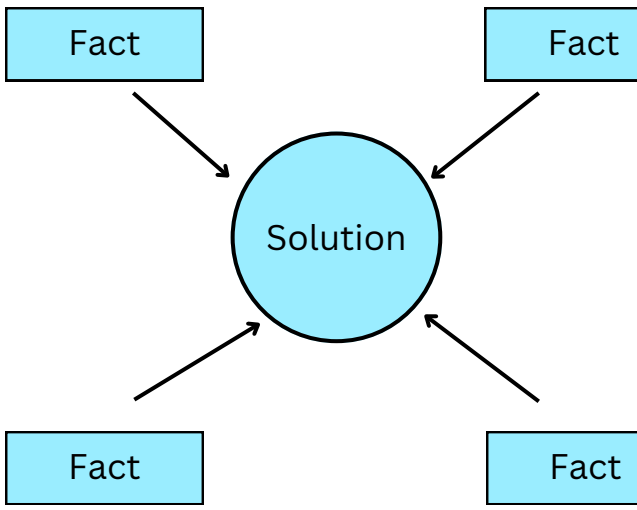
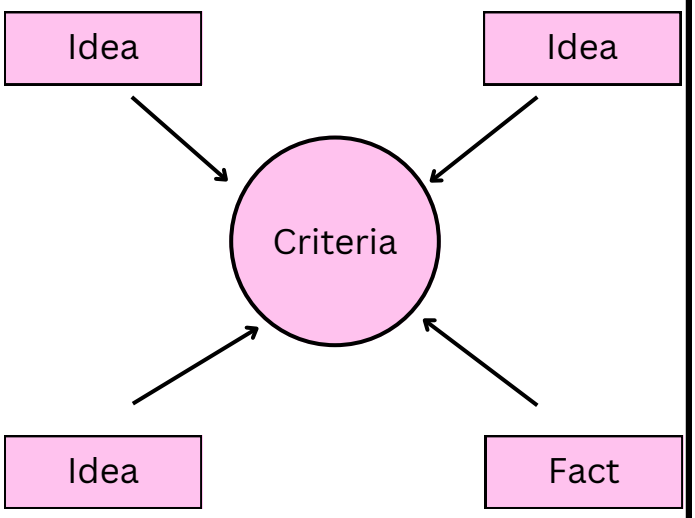
Convergent thinking is the process by which multiple pieces of facts and logic are used to generate a rational solution to a problem. Although we never explicitly described how we used convergent thinking in our website, our team unconsciously used it multiple times by manipulating absolute scientific facts (such as gear mechanics, physics, programming etc.) to facilitate better design choices.

Divergent thinking is the process by which multiple ideas are brainstormed and tested in response to a solution criteria or question. An example of this team using divergent thinking was when we freely sketched and tested prototypes of multiple different ideas to handle our wire management situation.

Convergent thinking



Divergent thinking



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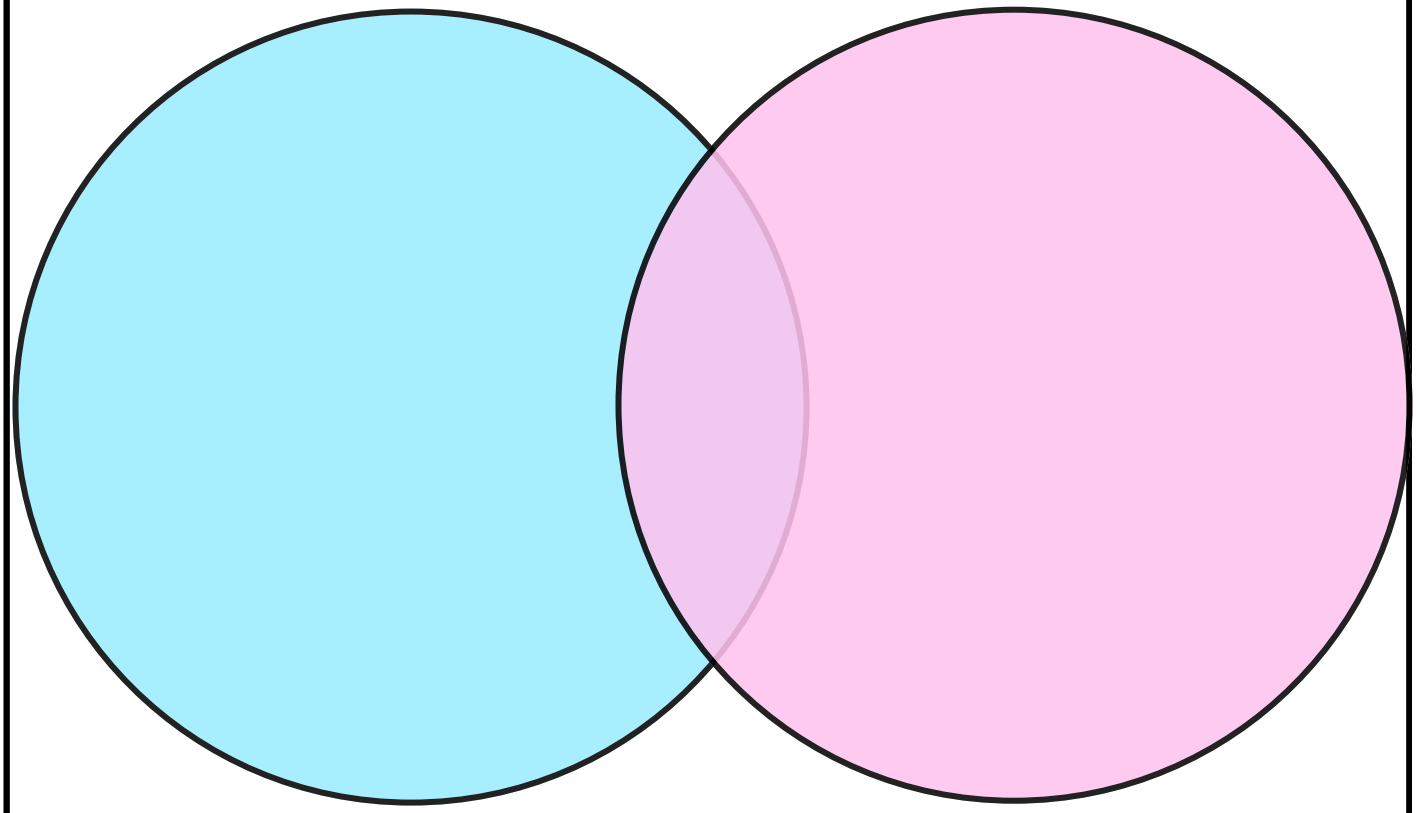
Part 1: Use the Venn diagram below to compare and contrast convergent and divergent thinking.

Convergent thinking **Divergent thinking**



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Part 2: Use the tables below to list the pros and cons of convergent and divergent thinking

Convergent thinking	
Pros	**Cons**

Divergent thinking	
Pros	**Cons**

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Part 3: It's time to reflect! Use the writing prompts below to reflect on what you learned about convergent and divergent thinking!

Do you tend to use divergent or convergent thinking more often? Why?

What is your favorite thing about each thinking style? What is your least favorite thing about each thinking style?

While convergent and divergent thinking may have their differences, they both have their functions in everyday life. When can you use both convergent **and** divergent thinking? How is this different from using just one of them?