## **Problem Solving Study Cycle**

Do you spend too much time doing HW problems? Do you have trouble understanding problems? Do your grades reflect your time and effort?

Success in problem solving classes requires an understanding of the material <u>before</u> you try the HW. Spending time learning concepts and how they relate to each other will make doing the HW faster and easier.

**Identify the new** 

concept(s) you are

learning. Develop a

broad understanding

of the newmaterial.

2. Connect

Connect the new

HW and/or real life

information to material

you have already learned.

Think about how the new

- ☐ How can I develop a better understanding of this concept?
- ☐ How does the book present the concept vs. lecture?
- ☐ What are some ways this concept could be applied?
- ☐ How is new material related to the material I've learned in the past?

3. Apply

Begin to apply your knowledge to HW or other practice problems.

□ What concepts do I need to know to answer each question? Do I know the concepts well enough to answer confidently?

☐ What practice problems are

available to me?

☐ If I get stuck, what tools can I use to help me? Do I understand how/why I got unstuck?

## 1. Familiarize

- ☐ What are we learning? How can I define it?
- □ Do I have a general understanding of what it is?
- ☐ Where can I go to learn more? (i.e. textbook, YouTube, Professor's office hours, classmate, etc.)

4. Analyze

- What concepts, formulas or rules did I apply when answering this question?
  Why did I use them?
- ☐ What were the steps that I did? Why did I do each step? Could I teach it to someone else?

Scrutinize every problem you do. Think about how and why you're doing each step.

Assess each solved problem. Think about how it could be modified or made more challenging.

- □ Are there other ways the problem could be solved?
- ☐ What are the differences and similarities between this problem and others?
- □ Can the problem be modified to become more challenging?
- ☐ What questions related to this problem might the professor ask on an exam?

5. Evaluate