Problem Solving Study Cycle Worksheet

Complete each step from the problem solving study cycle for each new topic you learn in class.

1 Familiarize

1a. The new topic I was/will be introduced to in lecture is_____

1b. I will learn about this topic by going to lecture and _____
(Reading chapt. 3, going to khan academy, etc.)

1c. Use your notes from 1b to write a summary of the topic below. Write definitions, diagrams, background information that you learned, etc.

1d. Did you learn any new equations/variables? If you fill out the table below.

Formulas/Equations I need to know:

Variable	Definition	Units	If this variable changes, what happens to the outcome?

2 Connect

2a. How can I develop a better understanding of this topic if I get stuck later?

2b. What are some ways this concept can be applied?

2c. How is this new material related to material I learned in the past?

3 Apply

3a. I can find practice problems from _____and_____.
(Hw, textbook, extra lecture problems, practice exams, etc.)

3b. Do I understand this topic well enough to start doing problems? If no, refer to 2a.

3c. Choose a practice problem from 3a (medium to hard challenge level) and write it below:

3d. If applicable, write a list of the variables you are given (knowns) and the variables you need to find (unknowns)

Knowns units **Unknowns units**

3e. Equations/rules I can use to solve this problem:

3f. Solve the problem below:

3g. Did you get stuck? If yes, what tools did you use to help you get unstuck? How/why did you get unstuck?

Problem Solving Study Cycle Worksheet

4 Analyze

4a. Think about how you solved the problem and why you solved it the way you did. Return to 3f and separate your work into defined steps, numbering each one. Fill in the table below by writing in words what you did for each step.

Step #	Explain in words what you did	Why?

(Continue on back if needed)

4b. Try to teach the problem to someone else or to yourself (aloud). Were you successful? If no, read what you wrote in 1c and 1d then repeat steps 3c-4b again with a similar problem.

5 Evaluate

Was the problem that you did challenging? Yes or NO

If yes, why? If no, challenge yourself to do steps 3c-4b again with an even harder problem

What are some similarities/difference between this problem and others that you have done in this class?

How could the problem be modified on an exam to add a "twist" that would make it more challenging?