

## Questions

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Question 1

NAME: \_\_\_\_\_

### Metacognitive Survey

1. Describe some *specific* things you learned in the last course section:
2. Identify one or more *specific* concepts in this course section you found relatively easy to understand:
3. Do those concepts share anything in common with other concepts you have found easy to understand in the past? If so, what is common between them?
4. Identify one or more *specific* concepts in this course section you found confusing:
5. Do those concepts share anything in common with other concepts you have found confusing in the past? If so, what is common between them?
6. Identify at least one concept or skill you will devote more study and practice to:
7. How well were you able to budget your time during this last course section? Identify at least one thing you can do (starting *today*) to better manage your time:
8. Describe at least one specific action you will take (starting *today*) to overcome your most significant learning obstacle.
9. If the last action you took to overcome a learning obstacle was not successful, explain why:

**Remember: you are ultimately responsible for your own learning. No one can force you to learn, and no one can achieve your goals for you.**

file 02902

NAME: \_\_\_\_\_

### **Problem Log**

*To help you measure and improve your own learning, it is good to keep track of areas where you have been prone to miscomprehension. This way, you may recognize your weaknesses, which is the first step in overcoming them.*

1. Identify concepts you had difficulty understanding, citing specific questions (or parts of questions) from this worksheet where these difficulties were apparent. If you are tempted to write, "Everything!" you need to see your instructor for help in answering this question.

2. Are there any common points of difficulty you see between this worksheet's subjects and subjects from past worksheets?

3. Identify specific steps you will take (or continue to take) to overcome your greatest academic weaknesses.

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Question 3

NAME: \_\_\_\_\_

**Course section outline**

Write a brief outline of all subjects and concepts studied in this course section, using your own words. Feel free to give examples to show what you have learned. *Do not merely copy material from outside sources or from someone else – this needs to come straight from your own mind!*

file 03000

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Question 4

As an instructor, how to you help students develop the ability to monitor their own learning? What specific tools do you use to teach metacognitive skills?

file 02903

## Answers

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### Answer 1

Be sure to give specific answers. If you cannot think of something to write as an answer, you are not thinking deeply enough. If you think of "everything" in response to questions regarding difficult concepts and learning obstacles, you either need to take a lower-level course or you are not thinking deeply enough about your own learning process. If you cannot be specific in answering these questions, you need to see your instructor for help, because he/she will definitely be able to recognize specific weaknesses after working with you.

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### Answer 2

When answering question #1, avoid being too specific or too vague. What you want to do is focus on the particular concept, not the details of the question or the general subject of the worksheet. Look for the root cause of your problems. A good answer to this question is one that leads directly to a workable plan of action in overcoming it, and may usually be found by asking yourself "why" often enough. Read these examples:

**Too specific** – *I entered the 300 ohms in my calculator instead of 330 ohms as I should have on question 34, and that made me get the wrong answer for total resistance.*

**Too vague** – *Math confuses me.*

**Fair answer** – *I kept entering the wrong numbers in my calculator as I tried to solve for total resistance in the circuit of question 34.*

**Better answer** – *I kept confusing numbers from the last problem (number 33) on my scratch paper as I tried to solve for total resistance on question 34.*

**Best answer** – *Question 34 revealed a common problem of mine: I try to cram too much work on one sheet of paper, and I end up confusing myself by entering numbers from a previous problem when I'm working on solving a different one.*

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### Answer 3

Your outline need not be formal – just be sure to mention all the major subjects and concepts. The more you can think of, and the more detail in which you are able to elaborate, the better you have learned it.

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### Answer 4

If you are at a loss for an answer here, try some of these suggestions:

- Resist the temptation to provide immediate answers to students' questions. Silence is an underrated teaching tool – return the question to the student in the form of an easier question, giving them time to think it over and to respond.
- Have your students regularly share their problem-solving strategies in class so you and their peers can see what's going on inside their heads.
- Give specific assignments that ask students to document the steps necessary to solve a problem, rather than merely asking them to provide an answer.

## Notes

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### Notes 1

*Metacognition* is awareness of one's own thought processes, and in my opinion is the most important skill one can gain from higher education. To be able to monitor and assess one's own learning, and to take corrective action to overcome weaknesses, is vital in becoming a self-directed learner. While every dedicated and competent instructor strives to develop metacognitive skills in their students, it is not often taught explicitly. The purpose of this question is to remind students of the importance of metacognition and to help them become self-reflective by asking them to complete a survey about what they have learned, how they learned it, what obstacles they had to overcome, and what specific actions they will take to overcome remaining obstacles.

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### Notes 2

Helping students overcome academic problems is very similar to the task counselors face in helping their clients overcome personal problems of all kinds. Neither counselors nor teachers can fix anyone's problems directly, but they can help the person see what their problems are. Identifying the nature of a problem is absolutely crucial in overcoming it!

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### Notes 3

This question makes an excellent pre-test question: completed outside of class and collected immediately before the exam is taken. The real purpose for it, of course, is to get students to think about what they have learned, which is metacognition.

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### Notes 4

The purpose of this question is to get instructors to think about how they teach students to think about thinking. So, I suppose you could call this a meta-meta-cognitive question.