Approaches

• Write down the problem in your own terms.
• Write down what you know. Write down what you want.
• Think about the type of the answer: is it a number, an algorithm, a function, an equation...?
• Do several examples.
• Do concrete examples.
• Try smaller, related problems.
• If there's something to do, try it. See if it helps.
• Apply wishful thinking: If I had x, I could finish. Can I get x, or something almost as good?
• Consider extreme cases.
• Use your resources such as books from previous courses, online supplements, and judicious internet searches.
• Be persistent.
• Get messy. Make mistakes.
• Work with others.
• Use context: if the problem is assigned in class, it may be related to recent material. If it comes from a text, there may be related problems nearby. If you know an answer exists, that may help you find an answer.

Test Problems

The old boat, fox, rabbit, cabbage problem: You have a boat, a fox, a rabbit, and a cabbage on one side of a stream. You can row yourself and one other item across the stream at a time. You can’t leave the fox and the rabbit together, and you can’t leave the rabbit and the cabbage together. How can you get everything across?

3.1-7
4.1-5
4-5