Read the scenarios described in Application 12.3 on page 203-204 of the course textbook.

Then, select one scenario, and apply the three-step process described in Chapter 11 and the two-step process described in Chapter 13 to resolve the issue.

As you develop your response, ensure that you are not using any of the faulty argument approaches described in Chapter 12.

Course Textbook

Ruggiero, V. R. (2015). The art of thinking: A guide to critical and creative thought (11th ed.). New York, NY: Longman.

ɔmotes careless spending, particularly
ɪerefore, credit card companies should
ɛ credit cards to anyone under age 21.
ed this college achieved distinction after
nds this college. Therefore, Marvin will
fter graduation.
be a crime because it does not directly
m to harm themselves.
lirecting, so parents who make all
for them are doing their offspring a

ding Professor Drone's class; all he does
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ɹse it can corrupt people.
ɪ is true, as scientific evidence
, a human being is nothing more than

ributing to the decline of language by
ɪbling manner.
ɪlyzes effort, this college is paying my
ɛ it impossible for me to learn English.
t to world peace. Nuclear energy sta-
ɔwer. So nuclear energy stations are a

ɛandidate for governor because he is in
y.
ɹre concerned about the dangers of
ns are concerned about the dangers of
ll politicians are religious authorities.
ɹndertake a comprehensive censorship
hip eliminates undesirable books and

em is further weakened, the elderly will
ɛrefore, if the Social Security system is
e elderly will not have to fear poverty.
's opinions is a sign of intolerance, so
place on a college campus.
at there will be fewer deaths if we ban
ɪ't kill people; *people* kill people.
ɛhat the fetus is human, but they have
they have no reasonable basis for

mmunism or be defeated by it. To be
is unthinkable. Therefore, we must

w. There is no way that anyone can ever deserve to live better than her or his neighbors, so capitalism is an immoral economic system.
x. If an expectant mother drinks, smokes, takes drugs, or fails to get proper rest, she may damage her unborn child. Therefore, if an expectant mother does these things and her child is born with a defect or ailment that can be traced to them, the mother should face criminal charges.
y. Custom is a form of folk wisdom. In some parts of the world, it is customary for "bride buyers" to buy (or sometimes kidnap) young women from their parents and sell them to men looking for wives. Even though we might find this practice distasteful, it would be morally wrong for us to object to others' practicing it.
z. Critical thinking has no application to movies because movies are an art form rather than an attempt to persuade.
aa. Conservatism is based upon hatred of the poor and I challenge anyone to disprove this fact.
bb. We shouldn't talk about religious differences lest some people be offended.
cc. Sociologists are social scientists. Psychologists are social scientists. Therefore, sociologists are psychologists.
dd. Ladies and gentlemen of the jury, you cannot convict my client of the brutal murder with which he has been charged. He has fought all his adult life to protect endangered species and received awards for his charitable contributions.
ee. If I win the lottery, I'll pay all my bills. Therefore, if I pay all my bills, I'll win the lottery.
ff. You ask whether I will vote to repeal the Affordable Health Care Act. There is no vote more important at this time than that very vote. Our fiscal welfare for years to come, not to mention the security of our elder citizens, will depend on every member of Congress taking a stand based on his or her beliefs.

12.3. Identify, investigate (as necessary), and resolve each of the following issues. Be sure you do not just accept your reasoning uncritically. Evaluate it by using the approach explained on pages 197–198. Then modify your argument as necessary and decide how you could most effectively demonstrate its soundness.

a. Radar detectors give speeders a warning so that they can slow down in time to avoid getting a ticket. Some people believe the detectors should be banned because they help people break the law. Others disagree, arguing that they should be able to protect themselves from the sneaky practices of highway patrols.
b. One proposal for combating the drug problem is government seizure of the property (cars, homes, etc.) of convicted drug dealers. One objection to this proposal is that such seizure

could violate the rights of innocent parties, such as spouses and children.

c. Since smoking is not permitted at one's desk in many companies, significant time is presumably lost in unauthorized smoking breaks in restrooms or outside of buildings. A company could save itself that time, and the money it represents, by establishing a policy of hiring only nonsmokers. Of course, some people would consider such a policy discriminatory.

d. Psychiatrist Thomas Szasz wrote: "If he who breaks the law is not punished, he who obeys it is cheated. This, and this alone, is why lawbreakers ought to be punished; to authenticate as good, and to encourage as useful, law-abiding behavior. The aim of the criminal law cannot be correction or deterrence; it can only be the maintenance of the legal order." Is this viewpoint reasonable?[1] Consider other possibilities, make your decision, and then explain your view and your reasons for holding it, taking care to anticipate and respond to possible objections to it.

e. The Transportation Security Administration (TSA) was created not long after 9/11. At first a division of the Department of Transportation, it was later transferred to the Department of Homeland Security. Its function is to ensure the safety of U.S. travel, particularly air travel. Airports can elect to use private firms to conduct screening, but the great majority use TSA. At first, TSA banned all knives, fingernail clippers and liquids, including water not purchased in a secure area. Then they permitted small knives, but soon changed their minds and banned them, even though they allowed hockey sticks, and golf clubs on board. They also spent tens of millions of dollars on full-body scanners, but then responded to public pressure and removed them. Should TSA be abolished and its function performed by private contractors?

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Solution
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Chapter 12.) In this chapter
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revamp their work until what was given in insight is so overlaid with secondary material that it is hardly to be recognized. Elaboration is for the mature only; it is for the rigorous, the exacting, the profound.[1]

THREE STEPS IN REFINING

Because refinement can spell the difference between success and failure, you should approach it very seriously. Yet there is no reason to be frightened by the task. It usually requires no special gift or talent. Rather, it is achievable by anyone who is willing to work hard and patiently. Three steps are involved: working out the details of the solution, finding imperfections and complications, and making improvements.

Step 1: Working Out the Details

The first step means determining exactly how your solution will be applied. It's easy to overlook this step or to ignore its significance. After all, most of the things we use every day and take for granted—the concepts, the processes and systems, the products and services—appear to us in refined form. We seldom have occasion even to imagine how they appeared in rough form or to appreciate the difficult challenges their refinement posed for their creators.

Consider the ballpoint pen. It was first conceived of in the United States in 1888 by John Loud. He even obtained a patent for his idea of using a rotating ball to deliver the ink to the paper. Yet he never was able to refine the pen enough to make it write cleanly. In 1919, Laszlo Biro of Hungary reinvented this pen, but he was unable to complete his design and market his idea until 1943—and even then the ink came out in splotches. Finally, Franz Seech of Austria worked out the basic difficulties in 1949 (the key to his pen's performance was fast-drying ink) and marketed his pen successfully. Thus, *61 years* elapsed from conception to refinement.[2]

When William Addis, a prisoner in a British jail, got the idea for the first toothbrush in 1870, he faced a number of challenges to his ingenuity. (In case you didn't know, before 1870 people cleaned their teeth by rubbing them with a rag.) What would be the right size for the invention? What shape would be best? What should it be made of? What kind of bristles would work best? How should they be held together? What could be used to contain the bristles? Addis saved a bone from his supper; bored tiny holes in it; obtained some bristles from his prison guard; cut, tied, and glued them together; and inserted them into the bone. When he was released from prison, he marketed his invention and became a business success.[3]

The refinement of the typewriter posed even greater challenges. How to place the keys, how to arrange the keyboard, how to make the keys strike, how to hold the paper, how to make the carriage move so that the keys wouldn't strike the same place over and over, how to move from line to line without turning the carriage by hand, how to ink the keys—these were just some of the

details that had to be worked out. In light of such numerous and complex problems, it is perhaps not surprising that before Christopher Sholes and Samuel Soulé completed their first working model in 1867, *51 other inventors* had tried and failed.[4]

We could cite many other examples of the refinement difficulties facing the originators of most new ideas. The point is that even the most creative idea does not become useful until the details of its application are worked out. The following approach will help you work out the details of your solutions more effectively:

If your solution involves *doing* something (as, for example, in a new process), answer these questions.

- How exactly is it to be done, step-by-step?
- By whom is it to be done?
- When is it to be done? (According to what timetable?)
- Where is it to be done?
- Who will finance it?
- What tools or materials, if any, are to be used?
- From what source will they be obtained?
- How and by whom will they be transported?
- Where will they be stored?
- What special conditions, if any, will be required for the solution to be carried out?

If your solution involves *making* something (as in a new product), answer these questions.

- How will it work? Explain thoroughly.
- What will it look like? Be specific as to size, shape, color, texture, and any other relevant descriptive details.
- What material will it be made of?
- What will the product cost to make?
- Who will pay for it?
- How exactly will it be used?
- Who will use it? When? Where?
- How will it be packaged?
- How will it be delivered?
- How will it be stored?

Step 2: Finding Imperfections and Complications

After you have worked out the details of your solution, your next step is to examine those details for imperfections. Remember that despite the normal tendency to regard your solution as perfect and to view this step as unnecessary, it is almost certain that your solution, like any other, contains at least minor flaws. Remember, too, that your success in persuading others of your solution's value will depend in no small part on your willingness to improve your idea in any way you can.

Until you are experienced in ex
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complications to look for and how
four approaches will prove helpful
in ensuring that your analysis will b

1. *Check for common kinds of* in which imperfections most o will apply to every type of solu therefore you should not limit for examining most solutions.
   - *Clarity:* Is the solution diffi
   - *Safety:* Does the solution m for whom it is used?
   - *Convenience:* Is the solutio
   - *Efficiency:* Does using the s
   - *Economy:* Is the solution te
   - *Simplicity:* Is the solution u
   - *Comfort:* Is the solution un
   - *Durability:* Is the solution l
   - *Aesthetics: Will* most peop
   - *Compatibility:* Does the so it should harmonize with?
2. *Compare the solution with co* process your solution is desig tion competitive with yours. I or competing solution is supe be superior in most major res respects. Any such area shoul
3. *Consider what changes your* occur if your solution is imple Decide which of them, if any,
4. *Consider the effects your sol* physical, moral, emotional, i how any would be affected. I might occur on any person o doubtedly be beneficial. But signal imperfections or comp

Step 3: Making Improvem

The third and final step in refini will eliminate imperfections. Her they are usually associated with applicable in most situations.

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Until you are experienced in examining solutions critically, the biggest difficulty you are likely to encounter is knowing what kinds of imperfections and complications to look for and how to go about looking for them. The following four approaches will prove helpful both in overcoming that initial difficulty and in ensuring that your analysis will be comprehensive.

1. *Check for common kinds of imperfections.* The following areas are the ones in which imperfections most commonly occur. (Not every one, of course, will apply to every type of solution.) Although the list is not exhaustive, and therefore you should not limit yourself to it, it is an excellent starting point for examining most solutions.

   - *Clarity:* Is the solution difficult to understand?
   - *Safety:* Does the solution create any danger for those who use it or those for whom it is used?
   - *Convenience:* Is the solution awkward to use or implement?
   - *Efficiency:* Does using the solution involve significant delays?
   - *Economy:* Is the solution too costly to build or implement?
   - *Simplicity:* Is the solution unnecessarily complex in design or format?
   - *Comfort:* Is the solution uncomfortable to use?
   - *Durability:* Is the solution likely to break or malfunction?
   - *Aesthetics: Will* most people find the solution ugly or unappealing?
   - *Compatibility:* Does the solution clash with any other product or process it should harmonize with?

2. *Compare the solution with competing ones.* Examine the existing product or process your solution is designed to replace, or study another proposed solution competitive with yours. Determine how the existing product, process, or competing solution is superior to yours. (Although your solution should be superior in most major respects, it may be inferior in one or two minor respects. Any such area should be considered an imperfection.)

3. *Consider what changes your solution will cause.* Ask yourself what will occur if your solution is implemented. Don't overlook even minor changes. Decide which of them, if any, will cause complications.

4. *Consider the effects your solution will have on people.* Look among the physical, moral, emotional, intellectual, and financial areas of life to see how any would be affected. Be sure to consider even the remote effects that might occur on any person or group. Most of the changes you list will undoubtedly be beneficial. But those that are in any way undesirable will often signal imperfections or complications in your solution.

Step 3: Making Improvements

The third and final step in refining your solution is to make improvements that will eliminate imperfections. Here, classified according to the types of solutions they are usually associated with, are the kinds of improvements you will find applicable in most situations.

For a new or revised concept:

- Change the terminology—make it simpler, easier to remember, more eye-catching.
- Change the way it is explained—use different illustrations, analogies, and so on.
- Change the application—use it in different situations or in different ways.

For a new or revised process, system, *or* service:

- Change the way it is done, the step-by-step approach.
- Change who does it.
- Change the place where it is done.
- Change the tools or materials used.
- Change the source from which the tools or materials are obtained.
- Change the place the tools or materials will be stored.
- Change the conditions required.

For a new or modified product:

- Change its size, shape, color, texture, and so on.
- Change its composition (the material it is made of).
- Change the way it is used.
- Change who will use it or when or where it will be used.
- Change the way it is packaged or delivered.
- Change the way it is stored.

Whenever you address an imperfection and are trying to think of ways to improve your solution, be sure to consider using the approaches for producing ideas explained in Chapter 9. Specifically, you should consider *forcing uncommon responses, using free association and analogy, looking for unusual combinations,* and *visualizing the possibilities.* Each imperfection and complication is, after all, a mini-problem in itself and will therefore respond to the creative process much as the larger problem did.

Most important, be sure not to settle for the first improvement that occurs to you. Instead, extend your effort to produce ideas, and withhold judgment of any one idea until you have produced a generous number of possibilities.

Occasionally, you will encounter an imperfection that requires you to return to the second stage of the creative process and investigate the matter more deeply—much as Alexander Graham Bell did when he took time out to master the principles of electricity. In extreme cases, you may even find that your solution is too badly flawed to be workable. At such times, you will feel as if all your efforts were wasted. But they will not really have been wasted. *To find out what does not work is an important step toward determining what does.*

TWO SAMPLE PROBLEMS

The First Problem

Now let's apply this approach to some cases and note how it works. The first case concerns Rocco, the manager of the movie theater. His problem was discussed in Application 7.3: "In recent years, a number of competitors have cut into his business, and cable televi
Netflix have reduced the number
needs to get more people to patro
to hear the owners talk of closin
don't improve."

Let's say that after consider
decide that the best is "how to a
Rocco's, and how to attract peop
Let's say, further, that after inves
of possible solutions, you decide
solution: *to present interesting d
offer discounts to groups.* Here
a few ideas are provided for each
more in your analysis.)

Step 1: Working Out the Details

- What displays? Arts and craf
- Which artists and craftspeopl
- How would Rocco find peop
area arts-and-crafts councils.
- Where would the displays be
- What supplies would be need
chairs, and display shelves. E

To provide entertainment:

- What entertainment? Amatei
vidually or in small groups.
- How would Rocco find them
check with area high school
- How would he pay them? He
from theater patrons or let th
so they could get jobs by wo

To offer discounts to groups:

- Which groups? Senior citizen
nesses in the area, members
- How would he let people kn
in his usual newspaper adver

*Step 2 and 3: Finding and Ove
Adding Interesting Displays:*

- *Complication:* Such displays
the theater and thus create p
the safety code.
- *Improvement:* Limit the num
way corner. Change them ea

as you would proceed in refining your solutions to problems. To appreciate the importance of these decisions, you need only reflect on the fact that an ill-considered plan of implementation can make even the most reasonable belief appear deficient.

STEP 1: DECIDING WHAT ACTION SHOULD BE TAKEN

This step consists of asking and answering appropriate questions. Though not all of the following questions will apply in every case, most of them will apply in the majority of cases.

- What exactly is to be done?
- How is it to be done? If, for example, it is to be done in stages, specify the stages. If a special procedure is needed, detail that procedure.
- By whom is it to be done?
- Will those doing it volunteer for the job or be assigned to it? If the latter, how will the assignment be accomplished?
- Will these individuals need to be trained? If so, what will the training consist of? How, when, and by whom will the training be given?
- When is the action to take place? According to what timetable?
- How will this action be financed? Publicized?

STEP 2: RECOGNIZING AND OVERCOMING DIFFICULTIES

At first consideration, you may be tempted to regard your plan of action as foolproof. That view is unwise because no matter how carefully a plan has been conceived, it is likely to encounter difficulties. By acknowledging this fact and making an effort to identify those difficulties in advance, you increase the chances of successful implementation. Following are four approaches to identifying potential difficulties:

1. Check for common kinds of imperfections, such as these. (This is an abbreviated version of the list in Chapter 11.)

   Safety: Does your plan create any danger for those who use it or those for whom it is used?

   Convenience: Will the plan be awkward to implement?

   Efficiency: Will the plan involve significant delays?

   Economy: Is the plan too expensive to implement?

   Simplicity: Is the plan unnecessarily complicated?

   Compatibility: Will the plan cla
   harmonize with?

   Legality: Does the plan confor
   for changing a law with which i

   Morality: Does any aspect of th
   ciples? (See Chapter 2.)

2. Compare your plan of action with
   whether those plans have any wor

3. Consider what changes your plan
   List those changes, taking care no

4. Consider the effects your plan wi
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   Be sure to consider eventual effec
   well as obvious ones.

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ideas and modify your plan according

To see how these steps would be
sample issues.

SHOULD CHILDREN PLE

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> ing rights of every human being
> the allegiance of its citizens. Fu
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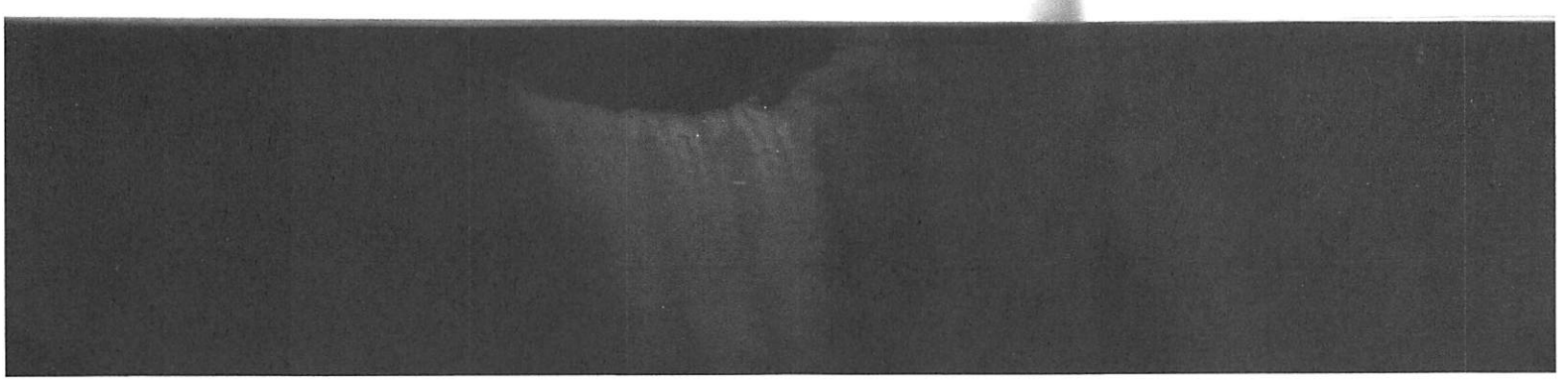

Compatibility: Will the plan clash with any other procedure it should harmonize with?

Legality: Does the plan conform to the law or at least include provision for changing a law with which it conflicts?

Morality: Does any aspect of the plan violate one or more ethical principles? (See Chapter 2.)

2. Compare your plan of action with competing ones, if any exist. Determine whether those plans have any worthwhile features lacking in yours.
3. Consider what changes your plan would produce in the existing situation. List those changes, taking care not to overlook any undesirable changes.
4. Consider the effects your plan will have on people, including not only physical effects but also moral, emotional, intellectual, and financial effects. Be sure to consider eventual effects as well as immediate ones and subtle as well as obvious ones.

After you have used these four approaches and identified the difficulties that might arise in implementing your plan, consider how the difficulties might best be overcome. As with all idea production, defer judgment and extend your effort to produce a variety of ideas for overcoming each difficulty. Then select the best ideas and modify your plan accordingly.

To see how these steps would be applied in actual cases, let's examine two sample issues.

SHOULD CHILDREN PLEDGE ALLEGIANCE?

From time to time, the issue of pledging allegiance to the flag is revived, and debate rages around the United States. The issue may be expressed as follows: "Should public school students be required to recite the pledge of allegiance in unison at the start of each day?" Let's assume that after careful analysis and some revision of your initial view, you reasoned as follows:

> A system of government built on respect for the essential dignity and the corresponding rights of every human being deserves the allegiance of its citizens. Whatever its lapses of application may be, the United States is built on respect for the essential dignity and the corresponding rights of every human being. Therefore, the United States deserves the allegiance of its citizens. Furthermore, any effort to develop in citizens the understanding and appreciation that underlie such allegiance is acceptable as long as it does not violate the dignity of the individual or cause him or her to compromise personal beliefs. Unfortunately, requiring public school students to recite the pledge of allegiance in school does in some cases cause them to compromise their personal