CHAPTER 16

Solutions to the Even-Numbered Questions in the Text

16.1

2. Decision under conflict.
4. Decision under uncertainty.
6. Decision under uncertainty.
8. Decision under risk.

16.2A

2. c
4. d

16.2B

N/A (students find their own answers).

16.2C

2. Overlooks the option that you might know a little about a given subject—enough, for example, to know what the subject covers.
4. Overlooks the option of making murderers serve life in prison.
6. Overlooks the option of studying both STEM subjects (science, technology, engineering, and math) and history/geography.
8. Overlooks the option that your boss is never drunk at work.
10. Overlooks the option that America is a republic based upon the Constitution and principles of morality common to all religions.
12. Overlooks the option of there being life on another planet (besides Earth and Mars).
14. Overlooks the option of being a patriot but not convinced that the war is right.

16.2D

N/A (criteria will differ by student).

16.3

2.

	N_1 = Die lands 1 or 6	N_2 = Die lands another number
S_1 = take bet	.33 x $90	.67 x -$90
S_2 = don't take bet	$0	$0

EV(bet) = $30 - $60 = -$30. EV(don't bet) = 0. Don't take the bet.

4.

	N_1 = termites	N_2 = no termites
S_1 = insure	.1 x -$750	.9 x -$750
S_2 = don't insure	.1 x -$10,000	.9 x $0

EV(insure) = -$750. EV(don't insure) = -$1,000. Insure the house.

6.

	N_1 = Co. lasts a year	N_2 = Co. goes bankrupt	N_3 = Co. disappears
S_1 = invest	.4 x $1000	.4 x -$500	.2 x -$1000
S_2 = don't invest	$0	$0	$0

EV(invest) = (.4)($1000) + (.4)(-$500) = + (.2)(-$1000)
= $400 - $200 - $200 = $0.
EV(don't invest) = $0
The expected value of both options is $0. That means that, as far as expected value in concerned, it doesn't matter what you do. Are there other things to consider?

16.4

2. Maximin = S_2; maximax = S_2; minimax = S_2.
4. Maximin = S_1; maximax = S_1; minimax = S_2.
6. Maximin = S_1; maximax = S_3; minimax = S_1.